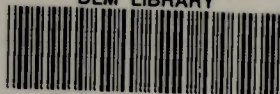
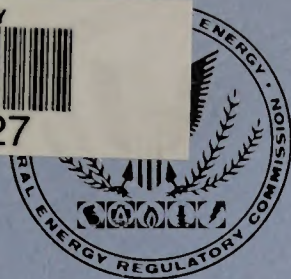


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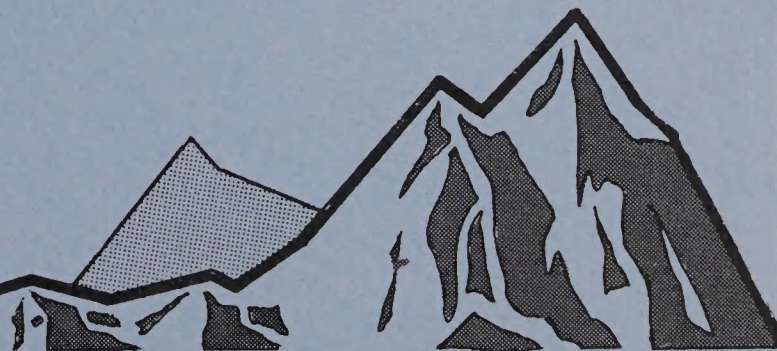
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CASE NO. U-45957

ROCKY MOUNTAIN PIPELINE PROJECT

ENVIRONMENTAL
IMPACT STATEMENT

TECHNICAL REPORT FOR
VISUAL RESOURCES



ROCKY MOUNTAIN PIPELINE COMPANY

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Rocky Mountain Pipeline Project

Environmental Impact Statement

July 1981

Department of the Interior

Bureau of Land Management

Office of Special Projects

Acknowledgement

This report was prepared in support of the Rocky Mountain Pipeline Project draft EIS by Stanley V. Specht, Landscape Architect, Bureau of Land Management.

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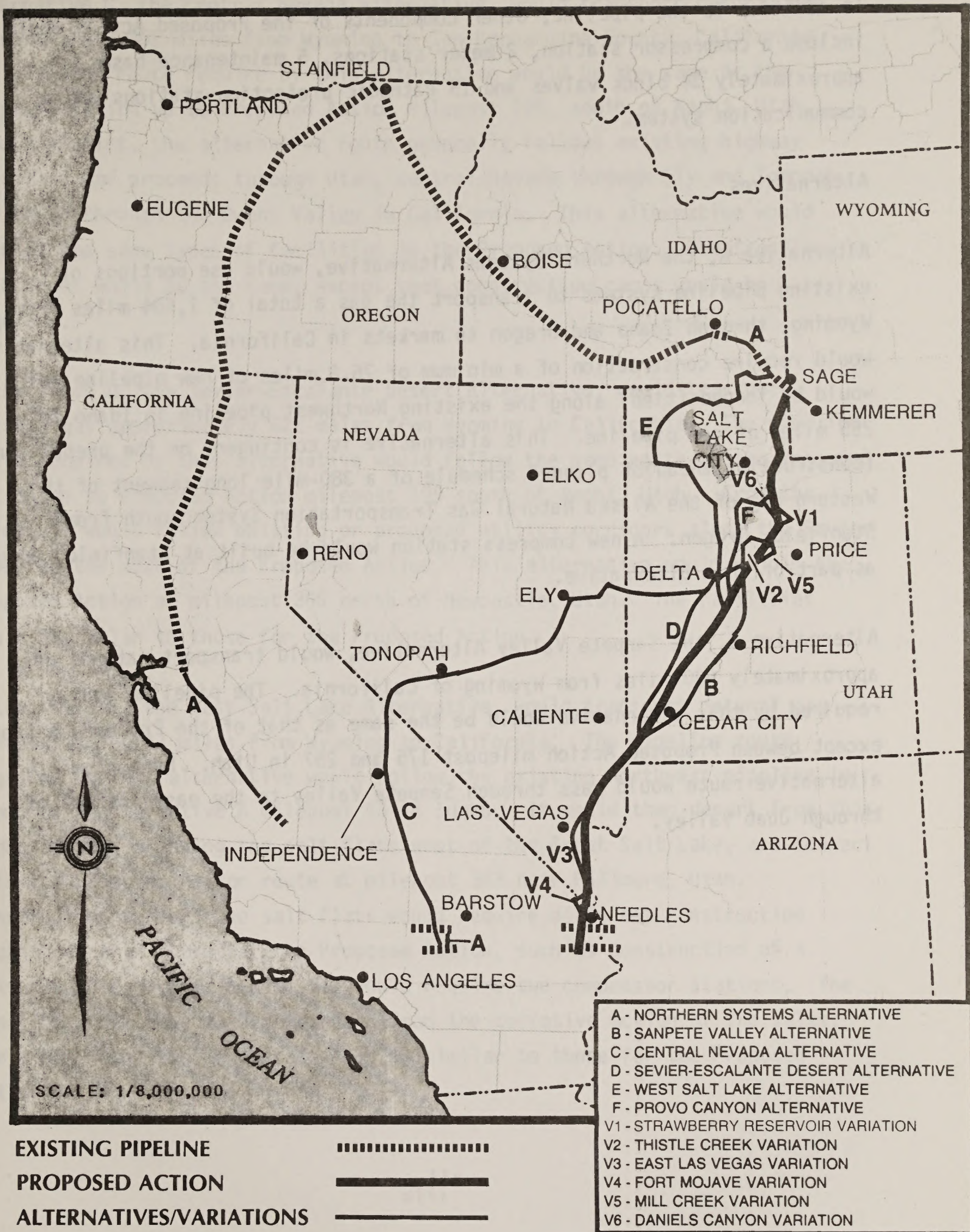
Description of the Study Area

The Visual Resources Technical Report describes the visual resources that occur on or near the Rocky Mountain Pipeline Project (RMPP). This document provides a synthesis of current knowledge of the visual resources in the RMPP area. The information presented here supplements and supports the RMPP environmental impact statement (EIS) which is limited in accordance with the new Council on Environmental Quality (CEQ) guidelines.

A complete project description is presented in chapter 2 of the RMPP EIS. The following is a brief summary of the Proposed Action, six alternatives, and six variations to the project. The EIS for the RMPP analyzes five variations, as Variation 1, Strawberry Reservoir Variation was deleted midway through the analysis.

Proposed Route

The RMPP is a 610-mile long natural gas pipeline transmission system proposed in a joint venture by Pacific Gas Transmission Company, (a subsidiary of Pacific Gas and Electric Company (PG&E), El Paso Natural Gas Company, Pacific Interstate Transmission Company, and Northwest Pipeline Company. They propose to construct a 583-mile long, 36-inch diameter interstate pipeline from Lincoln County, Wyoming, to the Nevada/California border in Clark County, Nevada. This pipeline would connect with a new 27-mile long, 36-inch diameter intrastate pipeline proposed by PG&E and Pacific Lighting Service Company. The project, as proposed, would provided potential customers in California and other southwestern states with natural gas supplies from the Overthrust Belt and Hingeline gas resource areas of the central Rocky Mountain region. (See map 1 for the location of the Proposed Action, alternatives, and variations).



MAP 1 ROCKY MOUNTAIN PIPELINE PROJECT
PROPOSED ACTION, ALTERNATIVES, AND VARIATIONS

In addition to the pipeline, other components of the Proposed Action would include a compressor station, 2 meter stations, 5 maintenance bases, approximately 34 block valves and 15 cathodic protection stations and a communication system.

Alternatives

Alternative A, the Northern Systems Alternative, would use portions of existing pipeline systems to transport the gas a total of 1,604 miles from Wyoming, through Idaho and Oregon to markets in California. This alternative would require construction of a minimum of 76.8 miles of new pipeline which would be looped (tied) along the existing Northwest pipeline in Idaho total of 255 miles of new pipeline. This alternative is contingent on the prebuilding (construction ahead of planned schedule of a 380-mile long segment of the Western Leg of the Alaska Natural Gas Transportation System south from Stanfield, Oregon. A new compress station would be built at Stanfield, Oregon as part of this alternative.

Alternative B, the Sanpete Valley Alternative, would transport natural gas approximately 630 miles from Wyoming of California. The pipeline route required by this alternative would be the same as that of the Proposed Action except between Proposed Action milepost 175 and 257 in Utah. Here, the alternative route would pass through Sanpete Valley to the east instead of through Juab Valley.

Alternative C, the Central Nevada Alternative, would transport natural gas approximately 862 miles from Wyoming to San Bernardino County, California. The pipeline route required by this alternative would be the same as the Proposed Action up to Proposed Action milepost 195, south of Nephi, Utah. From the point, the alternative route generally follows existing highway corridors and proceeds through Utah, central Nevada through Ely and Tonopah, and south through the Owens Valley in California. This alternative would require the same types of facilities as the Proposed Action. Construction techniques would be the same, except that construction camps would be required.

Alternative D, the Sevier-Escalante Desert Alternative, would transport natural gas approximately 622 miles from Wyoming to California. The pipeline route required by this alternative would follow the same route as the Proposed Action up to Proposed Action milepost 195 south of Nephi, Utah. From the point, it would follow existing or proposed utility corridors along the Sevier River to the west of the Proposed Action. This alternative would rejoin the Proposed Action at milepost 366 north of Newcastle, Utah. The facilities would be similar to those for the Proposed Action.

Alternative E, the West Salt Lake Alternative, would transport natural gas approximately 747 miles from Wyoming to California. The pipeline route required by this alternative would follow the existing Northwest pipeline in Wyoming to Alternative A milepost 48 in Idaho. It would then depart from this right-of-way, crossing the salt flats west of the Great Salt Lake, and connect with the Proposed Action route at milepost 363 near Fillmore, Utah. Construction through the salt flats would require different construction techniques than those for the Proposed Action, such as construction of a raised road for vehicle use. It would require two compressor stations. The pipeline would have to be protected from the corrosive action of the salts. The other facilities required would be similar to those for the Proposed Action.

Alternative F, the Provo Canyon Alternative, would transport natural gas approximately 619 miles from Wyoming to California. The pipeline route required by this alternative would follow the same route as the Proposed Action except from milepost 180 to 214 in Utah. Here, it would pass through Provo Canyon to the west. The facilities required would be similar to those for the Proposed Action.

Variations

The six variations studied are short pipeline segments that would replace portions of the Proposed Action. Variation 1, Strawberry Reservoir, would pass east of the reservoir and the Proposed Action. Variation 2, Thistle Creek would traverse Spanish Fork Canyon to the east of the Proposed Action. Variation 3, East Las Vegas would pass to the west of the Frenchman Mountains and the Proposed Action. Variation 4, Fort Mojave would pass west of the Fort Mojave Indian Reservation. Variation 5, Mill Creek would pass east of the Proposed Action. Variation 6, Daniels Canyon would pass through Daniels Canyons near Heber City, Utah.

VISUAL RESOURCES

The following narrative describes the methodology used to analyze the visual resource values along the proposed route, alternatives, and variations required for the Environmental Impact Statement (EIS). The existing affected visual resource environment is discussed are the expected environmental consequences which may occur if the pipeline system was constructed along the proposed or alternate routes. The pipeline itself is fully analyzed, as are ancillary facilities such as compressor stations and maintenance bases.

METHODOLOGY

Existing visual resource data were collected by visiting U.S. Forest Service and Bureau of Land Management (BLM) offices and by searching through existing draft or final environmental impact statements within the project area. Data collected included information formulated under the Forest Service's Visual Management System (VMS) and the BLM's Visual Resource Management (VRM) system. (See appendix A for a description of VRM scenic quality levels, visual sensitivity levels, distance zones, and management classes. See appendix B for a description of VMS variety classes, sensitivity levels, distance zones, and visual quality objectives.)

In areas where VRM Classes had not been prepared, interim VRM Classes (subject to change when inventories and management plans are completed by the land managers) were prepared for the EIS. Information used for the interim classification was obtained through oral interviews with persons familiar with particular localities, from U.S. Geological Survey topographic maps (1:250,000 scale), from state highway maps, from land use plans, from proposed land use designations, input from other technical specialists (especially in recreation, transportation, wilderness, soils, and vegetation), and from personal knowledge and experience. Most data gaps occur on lands under private ownership, or under other Federal agency, state, or local government ownership.

Each route was then broken into segments by milepost corresponding to VRM Classes or Visual Quality Objectives (VQO). Whereas a majority of the segments were contained within only one VRM class or VQO, occasionally a segment included more than one classification. This system was necessary, considering a mile-wide corridor for the purpose of analysis where a number of small units of classification were intermingled or where the proposed pipeline alignment paralleled the boundary between two or more VRM classes and/or

VQO's. Whereas comparing the two system classifications is difficult they were compared as best possible as follows:

BLM VRM Classes

Forest Service VQOs

| | | |
|---------|----------------------|---|
| Class 1 | Equals approximately | Preservation (P) |
| Class 2 | Equals approximately | Retention (R) |
| Class 3 | Equals approximately | Partial Retention (PR) |
| Class 4 | Equals approximately | Modification (M) and Maximum Modification (MM) |
| Class 5 | Equals approximately | Rehabilitation (REH) |

A narrative description was then written for each potential pipeline segment and ancillary facility location to describe the existing affected environment and assist with impact assessment. Each description included the VRM Class or VQO, and the description of landform, vegetation, and structures, or cultural modifications, in the existing environment and from where the pipeline alignment could be viewed.

Visual resource impact significance was determined in two phases. The first phase was designed to separate the impacts into three categories: those impacts which were clearly insignificant and required no further analysis; those impacts which were clearly significant and would require further analysis to determine appropriate mitigation to lessen their impacts; and those impacts which were perceived as occurring somewhere between the other two categories and would need further analysis to determine in which of the aforementioned categories they were to be placed. The matrix in figure 1 was used to accomplish phase one of the process.

The duration or length of time the impact could be viewed was assessed as part of determining the contrast rating for the various VRM Classes and VQO's. Changes directly related to vegetation that would be mitigated through revegetation as described in the Proposed Action and within one or two growing seasons (e.g., cropland, or in areas of natural grasses) were considered to be temporary and, thus, insignificant. The same rationale would apply to landform changes which would be recontoured during construction or immediately upon completion, and would be temporary and also insignificant. Other areas would not recover easily, such as where landform changes would result (e.g., steep, rocky areas) and where revegetation would be difficult (e.g., steep, dry slopes, or areas of generally low precipitation), and visual contrasts would likely remain for a longer time. Modifications which would be noticeable for 2 to 5 years was considered short term; those that would be noticeable for 5 years to the project life of 20 years, or longer, were considered long term.

As well as determining the duration of impacts through modification in landform and vegetation, the addition of structures was analyzed. Visual impacts which would directly be related to the addition of physical structures (ancillary facilities) to the landscape are considered to be significant only if they would contrast with the existing setting as determined by the contrast rating system. Such structural impacts were limited to compressor stations and maintenance yards where the visual contrasts resulting from cleared vegetation and the scale and design configuration of these facilities would make them highly visible and would detract from the natural landscape setting. It was assumed that block valves, access roads, and cathodic protection stations would place equal impacts on all routes analyzed and are considered to be insignificant because of their relatively small size and scale within the landscape.

FIGURE 1

DETERMINING CHANCE FOR SIGNIFICANT VISUAL CONTRAST

| DEGREE OF CONCERN ^{2/} | PROJECTED DURATION OF IMPACT ^{1/} | | |
|---------------------------------|--|---------------------------------------|---|
| | Temporary | Short term | Long term |
| Low | Insignificant ^{3/} Contrast | Insignificant Contrast | Insignificant Contrast |
| Medium | Insignificant Contrast | Insignificant Contrast | Chance for ^{4/} Significant Contrast |
| High | Chance for Significant Contrast | Chance for Significant Contrast | Chance for Significant Contrast |

^{1/} Temporary - those impacts which may only be noticeable during the first or second growing season following construction;

Short term - those impacts which may only be visible during the first 2 to 5 years following construction;

Long term - those impacts which may be visible from 5 years to the project life of 20 years, or longer.

^{2/} Low - the change would create visible contrast which would be seen, but probably would not attract attention;

Medium - the contrast created by the impact would begin to dominate the existing landscape;

High - the change would demand attention, and not be overlooked.

^{3/} An insignificant contrast is considered to have an insignificant impact.

^{4/} A chance for significant contrast is analyzed by conducting a contrast rating to determine significance.

Communications sites were not analyzed since the locations have not been determined. Whereas the applicant indicates that a majority of the communications needs can be met by using existing systems, the new facilities may create significant adverse visual contrasts in areas where they would be placed. (Communications towers are normally located on higher landform prominences where they may be seen from many viewing points. Additionally, the landform in these areas is usually of higher scenic value which contributes toward classifying the area in a more restrictive VRM Class or VQO.)

Cumulative development was considered in areas where existing rights-of-way for utilities and highways were already present such as in narrow canyon areas, making further development high in contrast.

Next, the degree of concern which the viewing public would be expected to perceive was assessed for each impact. Factors used in the evaluation included such variables as from where the impact could be seen (critical viewpoints), by how many viewers, for how long, and the likely viewers' attitudes toward change within the particular setting. The distance between the most critical viewing points and the impact was then determined to be foreground/middleground, background, or seldom seen (see definitions in appendix A). These variables were then summarized by degree of concern as either low, medium, or high:

Low - The change would create visible contrast which would be seen, but probably would not attract attention;

Medium - the contrast created by the impact would begin to dominate the existing landscape;

High - the change would demand attention, and not be overlooked.

Further, it was determined that all areas of VRM Class 2 and/or areas of a VQO of Retention would also be evaluated by use of a contrast rating (these areas are generally highly sensitive to the viewing public and/or of high scenic quality). Many times, however, these areas would have already been selected for evaluation by use of the previously described process.

The second phase for determining visual resource impact significance consisted of applying the BLM's contrast rating system (see appendix C) to the areas defined. If, upon application of the contrast rating, it was determined that the projected contrast was expected to fall within the same degree of modification permitted by the VRM class or VQO, the impact was termed insignificant. Otherwise, the impact was rated significant and further analyzed to determine if, through mitigative measures, the project could be modified to satisfy the VRM class or VQO.

AFFECTED ENVIRONMENT

Proposed Action

The Proposed Action would traverse the distinctive landscapes of the Middle Rocky Mountains, Colorado Plateaus, and Basin and Range physiographic provinces. Landform varies from steep mountainous areas with confined canyons in the northern portions, to rolling transitional slopes and broad valley bottoms in the middle portions, to a flat desert landscape with occasional contrasting mountains in the southern portion. Vegetation likewise varies from thickly vegetated slopes in the north, through sage-covered valleys with intermingling agricultural lands in the middle, to desert vegetation with Joshua trees and barrel cactus toward the southern end. Cultural modifications of communities, utilities, mining activity, and highways are scattered throughout the area. Visual resources are described more specifically below by milepost (along the proposed pipeline) or by facility. Refer to the EIS Graphic Supplement for location of mileposts.

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| Pipeline | | |
| MP 0-85 | 3,4 | Landform consists of broad valleys with transitional slopes to rolling hills. Vegetation is mixed meadow species, sagebrush, agriculture, aspen (in higher hollows and north slopes), oak brush, and pockets of timber. Scattered cultural modifications include agricultural lands, communities, a railroad, pipelines, utility lines, Highways 16 and 89, and Interstate 80 at MP 51. |
| MP 85-110 | 2 | Landform consists of valley bottoms with transitional slopes covered with sagebrush, interrupted by agriculture. Landscape is dotted with small communities, Interstate 80, Highways 35 and 133, and Alternate Highway 189. Rockford Lake State Park is near MP 98. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 110-115 | 4 | Landform consists of mountainous terrain with a covering of aspen, conifer pockets, and oakbrush, all contributing to brilliant fall color. Primitive roads cross the area as seen from the Kamas Valley communities. |
| MP 115-118 | 3,4 | Landform consists of mountainous terrain. Vegetation consists of interspersed conifer, aspen, and oakbrush, contributing to brilliant fall color. The area would be viewed from the proposed access road to the Currant Creek recreation complex. The route would enter the Uinta National Forest at MP 110. |
| MP 118-123 | R,PR | The mountainous slopes are vegetated with aspen, conifer pockets, and oakbrush, showing fall color. Proposed access to the Currant recreation area would be within the area. |
| MP 123-129 | M | Landform consists of mountainous slopes covered with aspen, conifer pockets, and oakbrush (fall color), and sagebrush toward the southern limit. Primitive roads are present. |
| MP 129-130 | M | Transitional slopes are covered with sagebrush. The area is viewed from forest access roads. |
| MP 130-133 | R | The gently rolling to transitional landscape is vegetated with sagebrush. U.S. Highway 40, which serves as access to the Strawberry Reservoir recreation area, passes through the area. |
| MP 133-137 | PR | The Strawberry Reservoir area surrounding landform consists of transitional slopes uphill from a gently rolling landscape. Vegetation is sagebrush. The area is known for intensive recreation with expansion trends. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 137-144 | R | The Strawberry Reservoir area is an intensive recreation area. Water level will rise as reservoir is filled. Landform consists of gently rolling to transitional slopes. Vegetation is sagebrush, with occasional riparian vegetation. Modifications include the west shore recreation road and recreation sites. The proposed route would be viewed from the reservoir. |
| MP 144-153 | PR, scattered M | The area consists of mountainous landform, with aspen and mountain brush for fall color. Primitive roads and proposed access to the proposed Fifth Water Reservoir are visually very sensitive. |
| MP 153-158 | 2, R, PR | The area consists of mountainous terrain with a steep, narrow river canyon. Vegetation consists of mountain brush and sagebrush. Area is traversed by the U.S. Highway 6/50, a railroad, and proposed access to the proposed Fifth Water Reservoir. |
| MP 158-170 | 3, PR, scattered M | Landform is mountainous with a small reservoir. Vegetation consists of mountain brush and scattered aspen showing brilliant fall color, and juniper on lower slopes. A primitive road is present. |
| MP 170-177 | 3 | Area consists of valley bottom and transitional slopes. Vegetation includes sagebrush with juniper on midslopes (excellent fall color). Area is crossed by Highway 89 and a railroad. Area can be seen from Highway 89. |
| MP 177-183 | 4 | Landform consists of transitional mountainous slopes with a mixed cover of sagebrush, juniper, and mountain brush (excellent fall color). Area is generally unseen from the ground. |

| <u>Milepost</u> | <u>VRM Class and/or VRO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 183-190 | 3 | Area consists of flat valley to transitional slopes. Vegetation includes sagebrush, with juniper on upper slopes. Area is traversed by Highway 132. |
| MP 190-195 | 3 | Restricted steep canyon walls give rise to mountain slopes on each side. Vegetation is mainly juniper with mountain brush higher up on slopes. Highway 132 and powerlines penetrate the area. Area can be seen from Nephi. |
| MP 195-232 | 3 | Landform consists of broad valley bottom with occasional rolling landscape. Agricultural areas are meshed with sagebrush, and juniper on upper slopes. Area encloses communities of Nephi and Scipio traversed by Interstate 15, a railroad, and existing and proposed transmission lines. Area can be viewed from Yuba State Recreation Area. |
| MP 232-235 | 2 | Landform is steep, restricted canyon, with sagebrush cover and juniper on upper slopes. Known as Scipio Pass, U.S. Highway 91, and Interstate 15 traverse the canyon area. |
| MP 235-284 | 3 | Landform consists of broad valley bottoms with interspersed, gently rolling hills. Agricultural areas, sagebrush, greasewood, saltbush, and juniper on higher slopes comprise the area's vegetation. Communities of Holden and Fillmore, Interstate 15, and telephone and electric lines traverse the area. |
| MP 284-289 | 4 | The flat valley bottom is vegetated with sagebrush, greasewood, and saltbush. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 289-291 | 3 | The transitional slopes are covered with interspersed juniper and sagebrush. The area is viewed in the background from Interstate 15. |
| MP 291-302 | 4 | Landform is flat to gently rolling. Vegetation consists of sagebrush, saltbush, with juniper on the higher slopes. The area is viewed as background from Milford. |
| MP 302-311 | 3 | Landform is a flat, broad valley bottom. Vegetation consists of low sagebrush, shadscale, and agricultural varieties. Area is highly modified for urbanized and agricultural activities near Milford. |
| MP 311-370 | 4 | Landform is flat, with a broad valley bottom. Vegetation is low sagebrush, greasewood, and shadscale. Modifications include the community of Newcastle, a railroad, utility lines, primitive roads and trails, and ranching activities. |
| MP 370-393 | 3,R,PR | Landform consists of mountainous terrain covered with scattered juniper and sagebrush (juniper on upper slopes). Highway 18, small communities, and electrical and telephone lines are present. Pipeline would cross the Dixie National Forest. |
| MP 393-405 | 4 | Landform consists of mountainous landscape with a scattered juniper cover, interspersed with sagebrush. Telephone lines and other utilities cross the area. |
| MP 405-435 | 4 | Area consists of typical flat hot desert with sparse creosote and saltbush and widely dispersed Joshua trees. Occasional trails and other visible scars can be seen in the desert landscape. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 435-491 | 3 | Area consists of flat desert with occasional small, gently rolling hills and a continuous pattern of scattered creosote bush. Cultural modifications include Interstate 15, other roads, a railroad, the community of Glendale, off-road recreation vehicle use areas, and many other desert scars of man's past use. |
| MP 491-493 | 3 | The pipeline would cross BLM's Las Vegas Dunes Recreation Lands. Landscape is flat, hot desert with creosote bush. |
| MP 493-495 | 3 | Landform is flat to gently rolling desert landscape. Vegetation consists of creosote bush. Area is modified with desert trails, a buried pipeline, and other utilities. |
| MP 495-505 | 3 | The pipeline would cross Frenchman Mountain/Rainbow Gardens Potential National Natural Landmark. Landform is gently rolling to rugged, with irregular erosional patterns which display vivid soil color of textured variety, making the area geologically unique. Creosote bush is the predominant vegetative species. |
| MP 505-507 | 2 | The pipeline would cross the proposed Las Vegas Wash Wetlands Park. Landform is flat to gently rolling, with visual interest created by riparian species. |
| MP 507-512 | 3 | Landform is flat to gently rolling desert landscape with a vegetation pattern of creosote bush where the land has not been disturbed by urbanization. City of Henderson and its surroundings visually dominate the area. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|------------------------------|---------------------------------|--|
| MP 512-518 | 3 | Landform is flat to gently rolling desert, with a vegetative pattern of scattered creosote bush. U.S. Highway 93/95/466 passes through the area and parallels boundary of the proposed McCullough Mountain National Natural Landmark from MP 518-527. |
| MP 518-535 | 4 | Landform is a flat, broad valley with creosote bush as vegetation. Cultural modifications consist of U.S. Highway 95 and numerous criss-crossing visually dominant high voltage transmission lines and accompanying mountainous roads, and a buried pipeline ROW. |
| MP 535-610(END) | 3,4 | Area consists of broad desert landform with occasional small, defined mountainous areas. Vegetation is creosote bush, with scattered Joshua Trees near Searchlight, Nevada. Community of Searchlight, Highway 95, Interstate 40 at MP 595, Fort Mohave Indian Reservation, and Needles are in area. |
| Ancillary Facilities | | |
| MP 0 | 4 | Sage compressor station and Sage maintenance base. Landform is the flat valley bottom along the Bear River. Vegetation consists of mixed meadow species and sagebrush. Cultural modifications are limited to primitive roads in a rural setting. The area is located near and viewed from Highways 51/89 and 89/30N. |
| Heber City, Utah Vicinity | 2 | Heber City maintenance base. Landform is flat valley bottom covered with vegetation types of interspersed agricultural species, sagebrush, or cleared areas. The area is located near and viewed from the Heber City area and Wasatch Mountain State Park. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-------------------------------|---------------------------------|---|
| Nephi, Utah Vicinity | 2 | Nephi maintenance base. Landform is flat to transitional slopes. Vegetation consists of sagebrush, agricultural species, or cleared area. The area is located near and viewed from the Nephi urbanized area, new Interstate 15, and Highway 132. |
| Cedar City, Utah Vicinity | 3 | Cedar City maintenance base. Landform is flat to gently rolling terrain with agriculturalized areas or sagebrush vegetative cover. Cultural modifications consist of occasional rural agricultural structures, and a railroad, and may be viewed from local highways. |
| Las Vegas, Nevada Vicinity | 3 | Las Vegas maintenance base. Landform is flat desert with a sparsely patterned creosote bush vegetative cover. Cultural modification include typical fringe area development. Area is viewed from the Las Vegas urbanized area and numerous highways. |

Variations to the Proposed Action

Any one, a number, or none of the following variations may be chosen to replace portions of the Proposed Action pipeline. In any case, the pipeline would begin near Sage, Wyoming and terminate near Needles, California. Discussion of ancilliary facilities only includes those structures which would specifically be located along the variation itself.

Variation 1, Strawberry Reservoir Variation
(Eliminated from further detailed analysis)

Variation 2, Thistle Creek Variation

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|--|------------------|--|
| Pipeline | | |
| (Refer to Proposed Action description between MP 0-156.) | | |
| MP 0-10 | 2 | Landform consists of the steep, restricted Soldier Creek Canyon through mountainous terrain. Vegetation consists of sagebrush with juniper on higher slopes. Pipeline alignment would follow U.S. Highway 6/50, a railroad, and Soldier Creek and bypass the community of Thistle. |
| MP 10-23 | 3 | Landform is a steep, restricted canyon. Vegetation consists of sagebrush with juniper on the upper slopes. The route would follow a river, U.S. Highway 89, and a railroad. |
| MP 23-27(END) | 3 | Landform consists of gentle to transitional slopes. Vegetation consists of sagebrush with juniper on the upper slopes. The route would parallel a railroad. |

(Refer to Proposed Action description between MP 176-610.)

Ancillary Facilities

No ancillary facilities, other than block valves, would occur along the variation.

Variation 3, East Las Vegas Variation

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|---|------------------|---|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-488.) | | |
| MP 0-3 | 3 | Landform is a flat desert landscape. Vegetation consists of a continuous pattern of sparse creosote bush. Cultural modifications include utility lines, a railroad, and secondary roads. The area is generally unseen. |
| MP 3-8 | 2 | Landform is flat desert covered with a sparse pattern of creosote bush. Variations would cross the Las Vegas Dunes Recreation Area established by BLM. |
| MP 8-14 | 3 | Landform is a flat desert landscape. Vegetation consists of sparsely patterned creosote bush. Cultural modifications include military development and urbanized areas. |
| MP 14-27 | 3 | The flat to gently rolling landscape is vegetated with sparse creosote bush. Cultural modifications include fringe urbanized areas of East Las Vegas and Henderson and associated utilities, highways, and other influences. The variation would parallel proposed Interstate 595 along the southern portion. The west boundary of the proposed Las Vegas Wash Wetlands Park is between MP 20 and 23. |
| MP 27-42 | 2 | The flat to gently rolling terrain is vegetated with creosote bush and is located within the proposed McCullough Mountain National Natural Landmark. The northern portion is near an established housing subdivision, and high voltage transmission lines cross the southern end. The area is viewed from U.S. Highway 95 and 93 and the urbanized area of Henderson. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|--|
| MP 42-59(END) | 4 | The landform is flat valley desert. Vegetation consists of creosote bush with occasional cactus. Numerous high voltage transmission lines and associated access roads cross the area between MP 42 and 45 where the variation would tie with the Proposed Action and would visually dominate the landscape. The alignment would parallel U.S. Highway 95 and a pipeline right-ofway between MP 49 and the end. |

(Refer to Proposed Action descriptions between MP 544-610.)

Ancillary Facilities

No ancillary facilities, other than block valves, would occur along the variation.

Variation 4, Fort Mojave Variation

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|--------------------|
|-----------------|------------------|--------------------|

Pipeline

(Refer to Proposed Action descriptions between MP 0-548.)

| | | |
|--------------|---|--|
| MP 0-10(END) | 3 | Landform consists of flat to transitional, dissected slopes. Vegetation consists primarily of creosote bush, with occasional cactus. Cultural modification is a transmission line, with a proposed Area of Critical Environmental Concern (ACEC) nearby. Area is viewed from the Fort Mojave Indian Reservation to the east. |
|--------------|---|--|

(Refer to Proposed Action descriptions between MP 544-610.)

Ancillary Facilities

No ancillary facilities, other than block valves, would occur along the variation.

Variation 5, Mill Creek Variation

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|---|---------------------------------|---|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-156.) | | |
| MP 0-6 | 2 | Landform consists of a steep, confined canyon. Vegetation is chiefly sagebrush, with juniper on the upper slopes. The canyon is presently dominated by Soldier Creek, U.S. Highway 6/50, a railroad, and utility lines. |
| MP 6-19 | M | The alternative would cross mountainous terrain as the right-of-way would enter the Manti LaSal National Forest. Vegetation is scattered aspen and mountain brush, with juniper at lower elevations. Primitive roads wind throughout the generally unseen area. |
| MP 19-21(END) | PR | Transitional mountain slopes are predominant, with vegetative coverings of juniper and mixed deciduous species. The route would be viewed from U.S. Highway 89 and the community of Indianola where the route would approach the Proposed Action. |

(Refer to Proposed Action descriptions between MP 169-610.)

Ancillary Facilities

No ancillary facilities, other than block valves, would occur along the variation.

Variation 6, Daniels Canyon Variation

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|---|---------------------------------|---|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-108.) | | |
| MP 0-5 | 4 | Landform consists of steep, rugged mountainous terrain. Vegetation is primarily aspen, conifer, and oakbrush. Primitive roads or trails are found in the generally unviewed area. |
| MP 5-6 | 2 | As the variation would enter the Uinta National Forest, the terrain consists of transitional slopes covered with sagebrush and juniper. The generally unmodified area is seen from Heber City and vicinity. |
| MP 6-11 | 2 | The flat to gently rolling landscape is vegetated with sagebrush where not otherwise modified through agriculture or urbanization. The area is viewed from Heber City. |
| MP 11-30 | 2,R | The variation would be located within the steep, confined walls of Daniels Canyon. Vegetation consists of scattered juniper and sagebrush. U.S. Highway 40, fences, and utility lines are located within the corridor. Daniels Creek sports excellent trout fishing. |
| MP 30-38 | R | Landform is gently rolling, dissected slopes. Sagebrush is the predominant vegetation type. The route would follow the road along the west side of the Strawberry Reservoir. A number of existing and proposed recreation sites are located in this portion of the intensive recreational region. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---|---|
| MP 38-47 | M, occasionally scattered MM and PR | The steeper, transitional mountain slopes are vegetated with mixed conifer and aspen patches, and oak brush. The alignment would follow a Forest Service road, with other primitive roads also evident. |
| MP 47-50 | PR | Landform consists of steeper transitional slopes with a mixture of aspen and oakbrush cover. The area is viewed from a Forest Service road. |
| MP 50-52(END) | R | As the variation would tie back to the Proposed Action, steep transitional slopes would be encountered. Vegetation consists of aspen, mountain brush, with juniper and sagebrush at the south end. The area is seen from a Forest Service road. |

(Refer to Proposed Action descriptions between MP 156-610.)

Ancillary Facilities

No ancillary facilities, other than block valves, would occur along the variation.

Alternative A, Northern Systems Alternative

The Northern Systems Alternative would traverse the landscapes of the Middle Rocky Mountains, Basin and Range, and Pacific Border physiographic provinces. Landform varies from the flat to transitional slopes of western Wyoming and southeastern Idaho, the flat to gently rolling areas of the San Joaquin Valley of central California, to the hot flat desert landscape of southern California. Vegetation includes diverse areas of sagebrush, mountain brush, pockets of aspen and conifer, the agriculturalized areas of Wyoming and Idaho, the vineyards, orchards, croplands, and natural grasses in central California, and the typical hot desert sparse creosote bush and occasional Joshua trees and cactus of the Mojave Desert. Cultural modifications include ranching and agricultural activities, urbanized areas and small communities, highways, recreation areas, and historical features. The following tabulation by milepost more explicitly describes the visual resources of the alternative route.

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|--|
| Pipeline | | |
| Kemmerer Loop | | |
| MP 0-10 | 3 | Landform consists of gently rolling slopes and Quinn Creek. Vegetation is sagebrush with mountain brush on the higher slopes. Occasional cultural modifications include U.S. Highway 30N, railroad, community of Nugget, and existing pipeline right-of-way. |
| MP 10-15 | 3 | Landform consists of the broad, flat Bear River Valley. Vegetation is mixed meadow species and sagebrush on drier sites. Cultural modifications include primitive roads and trails and a pipeline right-of-way. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-------------------|------------------|---|
| MP 15-22(END) | 4 | Landform consists of a dissected, rolling landscape. Vegetation consists of mountain brush, with pockets of aspen and conifer. Primitive roads and a pipeline right-of-way exist. |
| Pegram Loop | | |
| MP 33.5-38 | 4 | Landform consists of transitional mountainous terrain. Vegetation includes mountain brush, sagebrush, and agricultural clearings. |
| MP 38-40.5(END) | 3 | Landform includes transitional mountain slopes and the Bear River. Vegetation consists of mountain brush and sagebrush. A railroad, the Telluride Canal, and a pipeline right-of-way are found in the area which can be viewed from U.S. Highway 30N. |
| Soda Springs Loop | | |
| MP 66-72 | 4 | Landform consists of the flat to gently rolling Bear River Valley bottom. Vegetation consists of sagebrush, small shrubs, native grasses, and agriculture. Cultural modifications include U.S. Highway 30N, an existing pipeline right-of-way, and Soda Springs compressor station. |
| MP 72-78 | 3 | Landform is a flat valley bottom. Vegetation consists primarily of agricultural varieties. The area includes a railroad, U.S. Highway 30N, the community of Soda Springs, and various roads. |
| MP 78-85 | 2 | Landform is a flat valley bottom which includes the Soda Point Reservoir and the Bear River. Vegetation is sagebrush, highly developed areas, and agriculture. Cultural features dominate the area |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|----------------------|------------------|--|
| MP 78-85 (Cont'd) | 2 | and include Soda Springs, Soda Point Reservoir, State Highway 34, U.S. Highway 30N, Caribou County Park Marina, UP&L picnic area, and other recreation. The alternative would cross the potential Bear River State Scenic River at MP 83, and two historical trails (National Historical Oregon Trail and Hudspeth's Cutoff State Trail). |
| MP 85-89(END) | 4 | Landform consists of a flat valley bottom. The area is highly agriculturalized. |
| Pocatello Loop | | |
| MP 142-154 | 4 | Landform consists of a flat valley bottom. Vegetation is primarily of agricultural species. Cultural modifications include Interstate Highway 15W, State Highway 37, Pocatello compressor station, urbanization, and ranches. The alternative would cross the Fort Hall Indian Reservation, and would be seen from American Falls, and the National Historical Oregon Trail which are in the vicinity. |
| MP 154-160 | 2,4 | Landform consists of the flat valley bottom along the Snake River. Vegetation consists of agricultural crops, sagebrush, and native grasses. The landscape supports Interstate Highway 15W, other roads, ranches, and urbanization. |
| MP 160-167(END) | 2 | Landform consists of the flat valley bottom along the Snake River. Vegetation consists of agricultural crops and sagebrush. Cultural modifications include Interstate Highway 15W, other roads, and Rock Creek State Park. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|------------------------------------|------------------|--|
| Brentwood-Panoche Junction Section | | |
| MP 0-14 | 4 | Landform consists of the broad, flat San Joaquin Valley and gently rolling hills. Vegetation consists of vineyards, orchards, crops, and native grasses. Cultural modifications include agricultural structures and patterns, roads, utilities, and a substation. |
| MP 14-84 | 4 | Landform consists of gentle transitional slopes between the flat San Joaquin Valley and rolling hills, and includes many perennial and intermittent streams. Vegetation includes vineyards, orchards, crops, and native grasses. The alternative would closely parallel Interstate 5. The area includes numerous small communities, aqueducts and irrigation canals, agricultural structures, roads, and utilities. The alternative would pass near San Luis State Recreation Area at MP 79. |
| MP 84-92 | 4 | Landform consists of rolling hills, dissected by many intermittent streams. Native grasses are the primary vegetation. Primitive roads and water tanks are noticeable in the area. |
| MP 92-120(END) | 4 | Landform is the broad, flat San Joaquin Valley bottom. Vegetation consists of orchards, vineyards, crops, and native grasses. Cultural modifications include Interstate 5, agricultural structures, utilities and a substation, roads, and Panoche Junction compressor station at MP 120. |

MilepostVRM ClassDescription

Southern California Gas-PG&E Connection

MP 0-28(END)

4

Landform consists of the flat Mojave Desert landscape. Vegetation is very sparse, consisting of creosote bush, scattered brush, and occasional Joshua trees and cactus. A railroad, roads, mining activity, transmission lines, and military structures are located in this generally unseen area where the alternative connects with an existing pipeline.

Ancillary Facilities

Stanfield, Oregon
Vicinity

4

Stanfield compressor station. Landform consists of a flat to gently rolling landscape. Vegetation consists of cropland species, with occasional interspersed fence line vegetation and woodlots. Cultural modifications include occasional rural residences along rural roads with some other rural structures, two underground pipelines, irrigation canals, primitive roads, and overhead utility lines.

Alternative B, Sanpete Valley Alternative

The Sanpete Valley Alternative portion which varies from the Proposed Action would be lie entirely within the Colorado Plateaus physiographic province. Landform varies from flat valley bottoms to the steeper mountainous areas which separate the valleys. Vegetation likewise varies from sagebrush and agricultural plants on the lower areas, juniper and mountain brush at the higher elevations, to greasewood and sagebrush along the southern-most portion. Cultural modifications include a number of small communities, ranches, highways, utilities, and a railroad.

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|--------------------|
|-----------------|------------------|--------------------|

Pipeline

(Refer to Proposed Action description between MP 0-176.)

| | | |
|-----------|---|--|
| MP 0-4 | 3 | Landform is gently rolling. Vegetation consists of mixed sagebrush and juniper. A railroad and U.S. Highway 89 are located in the area, which are generally unseen. |
| MP 4-95 | 3 | Landform is a valley bottom created by the Sevier River. Vegetation consists predominantly of agricultura varieties, sagebrush, or urbanized areas, with juniper on the upper slopes. Communities are numerous in the area and include Fairview, Mount Pleasant, Spring City, Ephraim, Manti, Redmont, Salina, Aurora, Richfield, Elsin, and other smaller communities, as well as scattered ranches, a railroad, U.S. Highway 89, and State Highway 24. |
| MP 95-105 | 2 | Landform consists of steep canyon slopes along the Sevier River. Mountain brush is the predominant vegetation species. Cultural modifications are generally limited to U.S. Highway 89 and a railroad. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|---|
| MP 105-110 | 3 | Landform is a gently rolling river landscape along the Sevier River. Vegetation predominantly consists of sagebrush. U.S. Highway 89, a railroad, and the community of Marysvale are the modifications in the area. |
| MP 110-118 | 4 | Landform consists of rolling to steep transitional slopes. Vegetation is sagebrush, with juniper on the upper slopes. U.S. Highway 89 and utility lines are present. |
| MP 118-121 | 3 | Landform is a rolling valley bottom. Vegetation is predominantly sagebrush. Modifications include U.S. Highway 89 and utility lines, and the area is seen from the small community of Junction. |
| MP 121-124 | 4 | Landform is steeper transitional terrain. Vegetation is sagebrush with juniper on the higher slopes. Although no cultural modifications are evident, the area can be seen from U.S. Highway 89 and Circleville. |
| MP 124-129 | 3 | Landform is generally flat to gently rolling. Vegetation is primarily sagebrush. Circleville and U.S. Highway 89 are located within the area. |
| MP 129-131 | 3 | Landform consists of restrictive steep canyon walls along the Sevier River. Sagebrush and juniper are the primary vegetation types. The area is easily viewed from U.S. Highway 89, which traverses the area. |
| MP 131-149 | 4 | The steep mountainous terrain is occasionally interrupted with mountain valleys. Vegetation is predominantly juniper. Other than from the primitive roads, the area is generally unseen. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|--|
| MP 149-151 | 3 | Landform is steep mountainous terrain. Vegetation consists of sagebrush on the lower slopes and juniper higher up. The area is visible from U.S. Highway 91 and Interstate 15, and generally undisturbed. |
| MP 151-178 | 3 | Landform consists of a flat valley bottom to an occasionally gently rolling landscape. Sagebrush and agricultural varieties are the predominant vegetation types. Cultural modifications include Interstate 15, miscellaneous structures and ranches, the community of Parowan, and other small communities. |
| MP 178-182 | 3,4 | A graduation of gentle to steep slopes dominates the area, with sagebrush and juniper being the primary vegetation. Primitive roads are in the area, which are seen in the background from Cedar City and Interstate 15. |
| MP 182-200(END) | 4 | The alternative route would be in a broad flat valley bottom where it would tie with the Proposed Action alignment. Vegetation is greasewood and sagebrush. Numerous utility lines, a railroad, and windmills are within the area, which are not generally seen. |

(Refer to Proposed Action descriptions between MP 356-610.)

Ancillary Facilities

The major ancillary facilities of the Sanpete Alternative would be the same as those required for the Proposed Action. Refer to the Proposed Action for locations and descriptions of these facilities.

Alternative C, Central Nevada Alternative

The Central Nevada Alternative portion which varies from the Proposed Action would cross the distinctive landscapes of the Colorado Plateaus, Basin and Range, Cascade-Sierra Mountains, and return to the Basin and Range physiographic province where it would terminate in southern California.

Landform varies from a flat desert landscape with occasional steep slopes in cross ranges of mountains, the dramatic valleys of California dominated by the Sierra Nevada Mountains, and south to the flat, hot Mojave Desert of southern California. Vegetation varies equally, from the desert species of sagebrush and saltbrush, occasionally interrupted by agricultural areas of juniper or pinyon-juniper covered ridges, through greasewood, shadscale, and low sagebush zones. The alternative route would terminate in the hot desert region of sparse creosote bush, with intermingled cactus and occasional Joshua trees.

Cultural modifications are dominant, since the alternative would closely parallel U.S. Highway 6 from Central Utah westerly across Nevada to Bishop, California, where the alignment again would closely parallel U.S. Highway 395 to the alternative route's termination with an existing pipeline. Associated communities, utility lines, mining activity, aqueduct systems, and military facilities are found intermingled.

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|---|---------------------------------|--|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-196.) | | |
| MP 0-5 | 2 | Landform consists of a flat valley bottom. Vegetation is primarily agricultural varieties and sagebrush. The route would begin in the vicinity of Nephi, so urbanization and ranching activities are present as well as State Highway 132. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 5-7 | 2 | Landform is low rolling hills with juniper cover. Highway 132 traverses the area which is viewed from Nephi. Mining areas are visible. |
| MP 7-21 | 2 | Landform consists of a flat to gently rolling valley landscape. Vegetation consists of agricultural varieties with sagebrush areas. Highway 132 and primitive roads are found in the area. |
| MP 21-28 | 2 | Landform is a steep restricted canyon created by the Sevier River which visually dominates the area. Juniper and sagebrush comprise the vegetation. Cultural modifications include Highway 132, a railroad, and the Central Utah Canal. |
| MP 28-46 | 3 | Landform consists of a flat valley with river embankments and small bodies of standing water along the Sevier River. The area is agriculturalized and also supports sagebrush and riparian vegetation. Modifications include U.S. Highway 6/50, mining, and industrial areas. |
| MP 46-63 | 3 | The area is a broad flat valley supporting agriculture, sagebrush, and domesticated vegetation in the urbanized portion. The Delta - Hinkley urbanization dominates the route, which contains a railroad, mining, irrigation canals, and associated cultural modifications. |
| MP 63-71 | 3 | Landform is the same flat valley with numerous irrigation canals. Vegetation consists of low sagebrush, saltbrush, and barren areas. U.S. Highway 6/50 traverses the area and would closely parallel the route. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 71-109 | 4 | Landform is a flat to gently rolling valley. Vegetation consists of low sagebrush, scattered saltbrush, juniper on higher slopes, and barren areas. Modifications include U.S. Highway 6/50, primitive roads, and a high voltage transmission line which would cross the route at approximately MP 75. |
| MP 109-112 | 3 | Landform is a restricted, steep, rugged canyon, where U.S. Highway 6/50 is located. Sagebrush and juniper are the dominant vegetative species. |
| MP 112-145 | 4 | Landform consists of gentle slopes and flat valleys. Vegetation is low sagebrush, with juniper on higher slopes. U.S. Highway 6/50 and primitive roads are the primary cultural modifications. |
| MP 145-156 | 3 | Landform is a gradual transitional slope through a mountain pass. Vegetation consists of saltbrush, juniper on upper slopes, and occasional irrigated crops. Modifications include U.S. Highway 6/50 and its Sacramento Pass rest area at MP 151, occasional agricultural structures and houses, and a transmission line. |
| MP 156-160 | 4 | Landform is a gradual to steep slope to flat valley bottom below. Juniper is found on the upper slopes, while saltbrush and low sagebrush are found lower down. U.S. Highway 6/50 parallels the route as does a transmission line. |
| MP 160-163 | 2 | The pipeline route would pass through the Swamp Cedar Natural Area. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 163-172 | 4, MM | Landform is a flat valley, with saltbush and low sagebrush. U.S. Highway 6/50 and local roads are found in the area. |
| MP 172-173 | PR | Landform is a restricted canyon. Vegetation is predominantly juniper. U.S. Highway 6/50/93 traverses the area which is in the Humboldt National Forest. |
| MP 173-176 | MM | Landform is steep slopes covered with juniper. A microwave tower is the only evident cultural modification. |
| MP 176-177 | PR | Landform is steep mountainous terrain with juniper cover. U.S. Highway 6/50/93 would be parallel to the pipeline route. |
| MP 177-178 | MM | Landform continues to be steep with juniper cover. Area is viewed from U.S. Highway 6/50/93. |
| MP 178-195 | 4 | The route would pass through a flat valley, containing Comins Lake, saltbush, low sagebrush, and patterns of agriculture. Modifications include U.S. Highway 6/50/93, ranches, gravel pits, local roads, and a recreation area at MP 182. |
| MP 195-201 | 2 | The alternative would enter the steep, enclosed, and restricted Murry Canyon. Vegetation is pinyon-juniper and sagebrush. The landscape is heavily modified by soil stabilization and range improvement projects, U.S. Highway 6, an aqueduct, local roads, urban fringe development, and the Ward Mountain Recreation Area (MP 200). |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 201-232 | 4 | Landform is flat to gently rolling. Vegetation consists of pinyon-juniper with occasional agriculture. U.S. Highway 6, numerous primitive roads, and ranching are the primary modifications. |
| MP 232-237 | PR | This portion of the Humboldt National Forest is a steep, restrictive canyon with pinyon-juniper vegetation. U.S. Highway 6, Currant Creek Campground, a gravel pit, and gold mining are evidenced in the area. |
| MP 237-244 | 3 | Landform in the Currant Creek Pass is transitional slopes. Vegetation is low sagebrush, pinyon-juniper, and agricultural varieties. Modifications include ranching, the community of Currant, U.S. Highway 6, State Highway 20, and primitive roads. |
| MP 244-263 | 4 | The flat valley floor is vegetated with low sagebrush and scattered saltbush. Oil exploration and production fields occur near MP 255. U.S. Highway 6, ranching, primitive roads, and habitation also occur within the area. |
| MP 263-268 | 2 | The transitional sloped landscape is covered with low sagebrush and scattered saltbush. U.S. Highway 6 and occasional ranching activities are evident. |
| MP 268-274 | 2 | Landform consists of a restricted canyon with pinyon-juniper as the vegetative cover. U.S. Highway 6 is located through this canyon. |
| MP 274-278 | 3 | The transitional sloped landform is covered with low sagebrush and saltbush vegetation. The alternative would parallel U.S. Highway 6. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 278-280 | 2 | Landform is gently rolling, covered with low sagebrush and saltbush, and viewed from U.S. Highway 6 which passes through the area. |
| MP 280-287 | 3 | The gently rolling landscape supports greasewood, low sagebrush, and shadscale. U.S. Highway 6 is present. |
| MP 287-289 | 4 | Landform is gently sloping. Vegetation consists of low sagebrush, greasewood, and shadscale. U.S. Highway 6 and primitive roads are evident. |
| MP 289-294 | 3 | The gently sloping landform supports greasewood, low sagebrush, and shadscale. U.S. Highway 6 and primitive roads are the cultural modifications. |
| MP 294-302 | 4 | The flat valley bottom supports greasewood, low sagebrush, and shadscale vegetation. U.S. Highway 6 and primitive roads are present. |
| MP 302-310 | 3 | Landform is a flat valley bottom. Vegetation consists of greasewood, low sagebrush and shadscale. U.S. Highway 6, State Highway 25, and the settlement of Warm Springs are cultural modifications. |
| MP 310-314 | 2 | Landform is a rolling mountain pass covered with juniper. U.S. Highway 6 also occupies the pass. |
| MP 314-329 | 3 | The alternative would pass through a flat valley bottom vegetated with low sagebrush. Cultural modifications include U.S. Highway 6 and primitive roads. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 329-331 | R,PR | Landform is gently sloping where the alternative would enter the Toiyabe National Forest. Scattered juniper and low sagebrush are the dominant vegetation types. U.S. Highway 6 is present. |
| MP 331-332 | PR,MM | The gently rolling landscape is covered with scattered juniper and low sagebrush. A roadside rest area is located at approximately MP 333 along U.S. Highway 6. A water tank is also located near the highway. |
| MP 332-338 | R,PR | Landform is gently rolling, with scattered juniper and low sagebrush cover. The alternative would parallel U.S. Highway 6. |
| MP 338-341 | R,MM | Gently rolling landscape is vegetated with scattered juniper and low sagebrush. U.S. Highway 6 traverses the area and water tanks are evident. |
| MP 341-356 | 3 | The flat valley bottom changes to a gently sloping landform, covered with low sagebrush. Cultural modifications include the Tonopah airport, scars from mineral prospecting, U.S. Highway 6, and limited urbanization. |
| MP 356-358 | 2 | The gently rolling landscape forms the saddle in a mountainous terrain which supports the City of Tonopah and its urbanized area, as well as U.S. Highway 6. Vegetation consists of juniper and low sagebrush. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 358-418 | 4 | The broad, expanse of landscape is gently rolling to flat. Vegetation is low sagebrush and salt marsh. The alternative in places would follow a historical railroad grade and in places parallel U.S. Highway 6. Mineral exploration scars, ranching structures, and mining and processing areas are evident. |
| MP 418-465 | 3 | Landform consists of a broad valley bottom lain at a gradual slope. Vegetation consists of sagebrush, saltbush, with occasional agricultural areas. Cultural modifications include U.S. Highway 6, rural roads, ranching activities, and the urbanized area of Bishop, to the west (near MP 465). |
| MP 465-469 | 4 | The alternative would follow a gentle slope along the valley edge. Vegetation consists of sagebrush, saltbush, and agriculture. |
| MP 469-486 | 3 | The flat valley bottom is vegetated with sagebrush, saltbush, and agricultural varieties. U.S. Highway 395, State Highway 168, and canals are the cultural modifications. |
| MP 486-488 | 3 | The alternative would enter a restricted, narrow valley floor between a hill and the Tinemaha Reservoir, and is further encroached by U.S. Highway 395 and the community of Fish Springs. Vegetation consists of sagebrush and saltbush. |
| MP 488-517 | 3 | Landform is the flat Owens River Valley with embankments along the intermittant river, with saltbush, sagebrush, and riparian species as the area's vegetation. The Los Angeles Aqueduct, U.S. Highway 395, and rural roads are evident in the area. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 517-522 | 3 | Landform consists of the flat river valley, reservoir, and intermittent Owens River. Saltbush, sagebrush, and agricultural areas are the dominant vegetative species. The community of Lone Pine and its urbanized area and a railroad are the modifications. |
| MP 522-544 | 4 | The gradual slope of the Owens Lake shoreline is the landform. Vegetation consists of sagebrush, creosote bush, and occasionally intermingled cactus. The alternative would lie in a restricted area along the lakeshore along with U.S. Highway 395, a railroad, transmission line, and an inhabited industrialized area. |
| MP 544-546 | 3 | Landform is a transitional slope. Vegetation consists of creosote bush and low sagebrush. Modifications include U.S. Highway 395, State Highway 190, aqueduct, railroad, and transmission line. |
| MP 546-554 | 2,3 | The alternative would lie within a restricted canyon between a transitional slope and reservoir/lake. Creosote bush is the predominant vegetation. Modifications include U.S. Highway 395, railroad, aqueduct, and transmission line. |
| MP 554-562 | 3 | Landform is a transitional slope between the mountains and valley bottoms. Vegetation consists of creosote bush and occasional cactus. Cultural modifications include U.S. Highway 395, railroad, transmission line, power plant at MP 554, aqueduct, ranching, and small communities. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 562-566 | 2 | A valley bottom is the landform, with vegetation consisting of creosote bush and occasional cactus. U.S. Highway 395, railroad, transmission line, and aqueduct are evident. |
| MP 566-569 | 2 | The restricted canyon contains creosote bush as vegetative cover. U.S. Highway 395, a railroad, aqueduct, and transmission line are modifications to the natural landscape. |
| MP 569-576 | 2 | Landform consists of a flat valley bottom with portions overlain with a rough lava flow. Creosote bush is the predominant vegetation. U.S. Highway 395, a railroad, and transmission line dominate the area. |
| MP 576-595 | 3 | The flat valley bottom is vegetated with creosote bush, agricultural varieties, and an occasional cactus. Modifications include U.S. Highway 395, small communities, primitive roads, ranching structures, railroad, and transmission line. |
| MP 595-600 | 2 | The gentle transitional slopes are covered by a scattering of creosote bush, low sagebrush, and cactus. Quarries and primitive roads exist in the area. |
| MP 600-606 | 2,3 | The rolling hills are covered with scattered creosote bush and cactus. A substation, transmission line, U.S. Highway 395, railroad, and primitive roads are the noticeable cultural modifications. |
| MP 606-609 | 3 | The gently rolling hills, with scattered creosote bush and cactus cover, are interrupted with occasional primitive roads. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 609-611 | 2,4 | The flat, creosote and cactus-covered landform is modified by mining scars. |
| MP 611-632 | 3 | The flat landform, covered by scattered creosote bush and cactus, is modified by U.S. Highway 395, mining, and primitive roads. |
| MP 632-666(END) | 4 | The final portion of alternative would follow a flat to gently rolling landscape where it would tie with an existing pipeline. Vegetation includes creosote bush, occasional Joshua trees, and scattered cactus. Cultural modifications include U.S. Highway 395, primitive roads, ranching, and military facilities in the Mojave Desert. |

Ancillary Facilities

The Sage compressor station and maintenance base and the Heber City and Nephi maintenance bases are the same as for the Proposed Action. Refer to the Proposed Action for locations and description of these facilities.

| | | |
|-----------------------------|---|--|
| Ely, Nevada Vicinity | 4 | Ely maintenance base. Landform consists of a flat valley to transitional gently rolling hills. Vegetation consists of big sagebrush, low sagebrush, and saltbush, or cleared areas. Cultural modifications include urban fringe development, and the area may be observed from the Ely area and associated highways. |
| Tonopah, Nevada Vicinity | 3 | Tonopah maintenance base. Landform is flat to gently sloping, or steeply sloped if located within the Tonopah urbanized area. The vegetative cover consists of a sparse sagebrush pattern. Cultural modifications include the urbanized area of Tonopah and its surroundings, the airport, and growth trends in the vicinity of the airport. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|------------------------------------|---------------------------------|--|
| Bishop, California Vicinity | 3 | Bishop maintenance base. Landform consists of a flat valley bottom vegetated with agricultural species, saltbush, and low sagebrush. Cultural modifications include the Bishop urbanized area, fringe development, and agricultural structures. |
| Inyokern, California 3 Vicinity | | Inyokern maintenance base. The flat valley bottom is agriculturalized in irrigated areas, surrounded by creosote bush. Cultural modification include U.S. Highway 395, the communities of Inyokern and Ridgecrest, and associated agricultural structures and utilities. |

Alternative D, Sevier-Escalante Desert Alternative

The Sevier-Escalante Desert Alternative portion which varies from the proposed action would be almost entirely with the Basin and Range physiographic province with only the first 30 miles being within the Colorado Plateaus physiographic province. Accordingly, the alternative would begin in a valley and mountainous terrain, while the remaining 150 miles would traverse a flat, broad valley bottom with occasional variety in gently rolling hills. Likewise, the vegetation consists primarily of juniper and sagebrush in the first 30 miles but modifies to a low sagebrush, shadscale, and greasewood pattern with intermingled agricultural lands as the route proceeds southward. Typically, the cultural modifications include Federal, state, and local highways, primitive roads, various-sized communities, utilities, railroads, and agricultural and ranching structures along the alternative right-of-way until it would rejoin the Proposed Action at the south end of the Escalante Desert.

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|---|------------------|--|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-196.) | | |
| MP 0-28 | 2 | See description for the first 28 miles of Alternative C, Central Nevada Alternative. |
| MP 28-67 | 3 | Landform is a flat valley along the Sevier River. Vegetation consists of sagebrush, agricultural varieties, and riparian species along the river. Lava beds are generally sparsely vegetated. Cultural modifications include the urbanized areas of Lynnwood, Delta, and Deseret, a railroad, U.S. Highway 6/50, and State Highways 26, 125, 132, and 257. |

| <u>Milepost</u> | <u>VRM Class</u> | <u>Description</u> |
|-----------------|------------------|---|
| MP 67-120 | 4 | The flat valley is interrupted occasionally by gently rolling hills. Vegetation consists of high sagebrush, turning to low sagebrush, shadscale, and barren areas when proceeding to the south. Utility lines, State Highway 257, a railroad, and ranch structures interrupt the natural landscape. |
| MP 120-130 | 3 | The flat valley bottom supports agricultural activities and growths of low sagebrush. The urbanized area of Milford, a railroad, State Highways 21 and 257, and ranching facilities provide cultural modification to the landscape. |
| MP 130-182(END) | 4 | The alternative would terminate at the end of a flat, broad valley desert landscape where it would join the Proposed Action near the community of Newcastle. Agricultural activities, low sagebrush, and greasewood vegetation types cover the landscape, as do a railroad, utility lines, primitive roads, and ranch facilities. |

(Refer to Proposed Action descriptions between MP 364-610.)

Ancillary Facilities

The major ancillary facilities of the Sevier-Escalante Desert Alternative would be the same as those required for the Proposed Action. Refer to the Proposed Action for locations and descriptions of these facilities.

Alternative E, West Salt Lake Alternative

The West Salt Lake Alternative which varies from the proposed action would traverse the Middle Rocky Mountains and Basin and Range physiographic provinces. Landform varies from the flat valleys and transitional slopes along the northern portions of the route, to the broad, expansive flat areas of the distinctive Great Salt Lake Desert and the occasional rolling hills of the intermingled valleys, to the south, where the alternative would rejoin the Proposed Action near Fillmore. Similarly, the vegetation varies from the northern species of high sagebrush, mountain brush, pockets of aspen, conifer, and juniper, to the Central Utah plants of low growing sagebrush, saltbush, greasewood, and shadscale. Cultural modifications consist of Federal, state, and local roads, smaller communities, railroads, transmission lines, and agricultural structures. The alternative would begin near Kemmerer, Wyoming and include the first two portions of the Northern Systems Alternative which would be "looped."

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| Pipeline | | |
| Kemmerer Loop | | |
| MP 0-10 | 3 | See description for Kemmerer Loop, Alternative A, Northern Systems Alternative. |
| MP 10-15 | 3 | Same as above. |
| MP 15-22(END) | 4 | Same as above. |
| Pegram Loop | | |
| MP 33.5-38 | 4 | See description for Pegram Loop, Alternative A, Northern Systems Alternative. |
| MP 38-40.5(END) | 3 | Same as above. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|--------------------------------|---------------------------------|--|
| Beginning at Montpelier, Idaho | | |
| MP 0-5 | 4 | Landform is a flat valley bottom. Vegetation consists of agricultural varieties and riparian vegetation along the Bear River. Cultural modifications include an abandoned railroad, U.S. Highway 36, and the Montpelier urbanized area. |
| MP 5-11 | 4 | The gradual slope of the valley bottom supports agricultural practices and sagebrush cover. State Highway 36 and small communities are modifications to the natural landscape. |
| MP 11-18 | R | Landform is rugged mountain slopes with intermingled valleys as the alternative would enter the Caribou National Forest. Vegetation consists of the tall conifer and aspen timber type. Modifications consist of State Highway 36, a transmission line and clearing, and recreational use. |
| MP 18-23 | R | Landform changes to steep, dissected canyons with tall conifer and aspen vegetation. The alternative would parallel State Highway 36 which is used as access for recreational activities. |
| MP 23-28 | 4 | The alternative route would follow transitional slopes which are covered with sagebrush, juniper on upper slopes, and agricultural land. State Highway 36 is present. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 28-66 | 4 | Landform changes from transitional slopes to a predominantly flat valley floor. Vegetation consists of primarily agricultural lands with interspersed sagebrush. State Highways 36 and 34, U.S. Highway 91, the communities of Preston and Weston, smaller communities, railroad, and extensive agriculture and associated structures are present. |
| MP 66-68 | 4 | Landform is transitional slopes covered with sagebrush. Area can be viewed from small valley communities. |
| MP 68-88 | 4 | The flat valley bottom is heavily agricultural with some interspersed urbanized areas. Modifications include a number of small communities, Interstate 15/ U.S. Highway 91 at MP 70, Interstate 80N at MP 83, and irrigated lands. |
| MP 88-93 | 4 | The alternative would cross transitional slopes with scattered juniper cover. Primitive roads and scattered ranches are evident. |
| MP 93-102 | 4 | Landform is a gently rolling valley bottom, supporting agriculture in the form of grazing and feed crops. Ranches are interspersed within the area. |
| MP 102-156 | 4 | The flat to gently rolling landform is covered by low growing scattered saltbrush or is otherwise barren. Ranching and primitive roads dissect the area. |
| MP 156-213 | 4 | The flat Great Salt Lake Desert is the dominant landform. The crusted salt flats are generally devoid of vegetation and are only penetrated by a railroad at MP 170. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 213-231 | 4 | The alternative would continue across the flat Great Salt Lake Desert, which consists of barren, crusted salt flats, and parallels Interstate 80 and a railroad. |
| MP 231-248 | 4 | The flat salt desert continues, with scattered greasewood when vegetated; otherwise it is barren. |
| MP 248-253 | 4 | Landform changes to a steep mountainous landscape with scattered juniper cover. Dispersed recreation, hunting, and ORV use are evident as viewed from a Wilderness Study Area which would be to the north of the alternative. |
| MP 253-286 | 4 | Landform is a flat, broad valley bottom with greasewood and shadscale. An Indian reservation, ranching, and primitive roads are evident. |
| MP 286-296 | 4 | Transitional slopes and gently rolling landforms would be crossed by the alternative. Vegetation consists of juniper, saltbush, and big sagebrush. Primitive roads can be seen. |
| MP 296-304 | 4 | The transitional to steep slopes are covered with saltbush, and big sagebrush, with juniper on the higher elevations. |
| MP 304-318 | 4 | The flat valley landform is covered with saltbush and big sagebrush, interrupted by primitive roads. |
| MP 318-330 | 3 | The broad flat valley landform is vegetated with saltbush, big sagebrush, and agricultural areas. Primitive roads and agricultural structures modify the landscape. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|---|
| MP 330-363(END) | 3 | The last portion of the alternative would be placed in a large flat valley as it would terminate near Fillmore to join the Proposed Action. Vegetation consists of big sagebrush and agricultural areas. Urbanized areas of Delta and Fillmore, rural roads, agricultural structures, U.S. Highway 6, State Highway 26, a railroad, utilities, and other small communities are evident in the area. |

(Refer to Proposed Action descriptions between MP 254-610.)

Ancillary Facilities

| | | |
|-------------------------|---|--|
| MP 0 | 4 | Montpelier compressor station and maintenance base. Landform consists of the flat valley bottom along the Bear River. The area is highly agriculturalized. Cultural modifications include urban fringe development. and agricultural structures. The area is viewed from the community of Montpelier and U.S. Highways 89 and 30N. |
| Lucin, Utah Vicinity | 4 | Lucin maintenance base. Landform is the flat, expansive Great Salt Lake Desert. The crusted salt flats are generally barren of vegetation, other than occasional saltbush patterns. Cultural modifications include the small community of Lucin, a railroad, Highway 30, and secondary and primitive roads. |

| <u>Milepost</u> | <u>VRM Class and/or VQ0</u> | <u>Description</u> |
|--------------------------|---------------------------------|---|
| Dugway, Utah Vicinity | 4 | Dugway maintenance base. The flat to gently rolling landform is overlain with a sparse pattern of greasewood and shadscale. The community of Dugway and its associated outlying structures, Highway 199, and primitive roads are the visible cultural modifications to the landscape. |

The Cedar City and Las Vegas maintenance bases would be the same facilities as would be required for the Proposed Action. Refer to the Proposed Action for locations and descriptions of these facilities.

Alternative F, Provo Canyon Alternative

The Provo Canyon Alternative which varies from the Proposed Action would be found in the Colorado Plateaus and Basin and Range physiographic provinces. Landform is characterized by transitional to steep mountainous slopes of the Wasatch Range, with interspersed intermountain valleys and plateaus. Vegetation ranges from sagebrush on the valley bottoms, juniper on the intermediate slopes, to mountain brush and mixed conifer and aspen stands on the higher slopes. Cultural modifications range from large communities and cities, Federal and state highways, primitive roads, utilities, railroads, and ranching structures.

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|---|---------------------------------|--|
| Pipeline | | |
| (Refer to Proposed Action descriptions between MP 0-108.) | | |
| MP 0-7 | 4 | The alternative would depart the Proposed Action northeast of Heber City and proceed westerly across a gently rolling landform. Vegetation consists of sagebrush and scattered aspen and conifer stands on the upper slopes. |
| MP 7-15 | 2 | Landform is a flat valley bottom with transitional slopes. Vegetation consists of sagebrush and agriculturalized areas. Cultural modifications are dominant and consist of Heber City and the surrounding urbanized area, U.S. Highway 40, and State Highway 233. The alignment borders the Wasatch Mountain State Park between MP 9-11. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 15-21 | 2 | The steep sided slopes extend upward from the Deer Creek Reservoir shoreline and are covered by sagebrush. Modifications include a scenic railroad line, and the alternative would border the Wasatch Mountain State Park. The area can be viewed from Heber City and environs, the state park, and the railroad. |
| MP 21-30 | R | The route would follow the steep, rugged, and confined landform of the Provo Canyon sculptured by the Provo River as it would enter the Uinta National Forest. Vegetation consists of sagebrush, conifer and deciduous mixture, riparian, and domesticated species. Cultural modifications have extensively changed the character of the natural landscape and include U.S. Highway 189, a scenic railroad line, an aboveground water pipeline, a power generation plant and substation, gravel pits, the community of Olmstead, State Highway 52, many landform scars, recreational sites, Bridal Veil Falls recreation site, and numerous other urbanized modifications. The area is visually highly sensitive from all viewing positions. |
| MP 30-32 | R,2 | The transitional to steep mountainous slopes, are covered with juniper at higher elevations. The area is viewed from the Orem urbanized area. |
| MP 32-33 | PR,3 | The steep slopes are covered with sagebrush, with juniper on the higher slopes. Cultural modifications include an aqueduct, and primitive roads and the right-of-way would be visible from the urbanized area. |

| <u>Milepost</u> | <u>VRM Class and/or VQO</u> | <u>Description</u> |
|-----------------|---------------------------------|--|
| MP 33-35 | R,PR | The steep, mountainous slopes are vegetated with sagebrush and juniper. Primitive roads, an aqueduct, and a transmission line are visible modifications. Viewed from the urbanized areas and nearby estates. |
| MP 35-38 | PR,2 | Landform consists of mountainous terrain with sagebrush and juniper vegetation. Cultural modifications include an aqueduct, primitive roads, and a transmission line. The area is viewed from the urbanized area. |
| MP 38-53 | 2 | The landform varies from steep slopes, through transitional grades, to the flat valley bottom. Vegetation consists primarily of sagebrush. The alternative would traverse an urbanized area surrounding the American Falls region. |
| MP 53-90 | 2 | Landform consists of gently rolling to flat valley bottom. Sagebrush and saltbush are the primary vegetation types. The alternative would cross U.S. Highway 6/50 at MP 82. |
| MP 90-96 | 4 | The landscape is primarily transitional to steep slopes, with vegetation consisting of sagebrush, saltbush, and juniper on higher slopes. |
| MP 96-182(END) | 2 | The alternative's final section would cross rolling hills to the point where it would connect with the Proposed Action. Sagebrush vegetation and agricultural areas comprise the land cover. Cultural modifications consist of primitive roads, a railroad, ranch structures, and U.S. Highway 91 at the terminus. |

(Refer to Proposed Action descriptions between MP 214-610.)

Ancillary Facilities

All major facilities would be the same facilities as would be required for the Proposed Action, and include the Sage compressor station and maintenance base and the Heber City, Nephi, Cedar City, and Las Vegas maintenance bases. Refer to the Proposed Action for locations and descriptions of these facilities.

Summary of Affected Environment

Table 1 summarizes the total number of miles and acres for each segment and facility site by VRM Class and/or VQ0 (based upon a 100 foot-wide pipeline construction corridor) which would be affected by the Proposed Action, alternatives, variations, and major ancillary facilities.

TABLE 1

SUMMARY OF AFFECTED ENVIRONMENT-VISUAL RESOURCES

| Pipeline - Route Name | NUMBER OF MILES AND ACRES IN EACH VRM CLASS/VQO | | | | | | | | | | | | | | | | | | | |
|---|---|----|---------|------|---------|------|---------|------|----|----|----|-----|----|-----|----|-----|----|----|--------|-------|
| | Class 1 | | Class 2 | | Class 3 | | Class 4 | | P | | R | | PR | | M | | MM | | Totals | |
| | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC |
| Proposed Action | -- | -- | 32 | 388 | 244 | 2957 | 270 | 3272 | -- | -- | 20 | 242 | 35 | 425 | 9 | 109 | -- | -- | 610 | 7393 |
| Alternative A, Northern Systems Alternative (WY & ID Loops) | -- | -- | 17 | 206 | 24 | 291 | 36 | 436 | -- | -- | -- | --- | -- | --- | -- | --- | -- | -- | 77 | 933 |
| Alternative A, Northern Systems Alternative (CA Connection) | -- | -- | -- | --- | --- | --- | 143 | 1733 | -- | -- | -- | --- | -- | --- | -- | --- | -- | -- | 143 | 1733 |
| Alternative B, Sanpete Valley Alternative | -- | -- | 39 | 473 | 275 | 3333 | 252 | 3055 | -- | -- | 20 | 242 | 35 | 424 | 9 | 109 | -- | -- | 630 | 7635 |
| Alternative C, Central Nevada Alternative | -- | -- | 110 | 1333 | 328 | 3975 | 352 | 4266 | -- | -- | 21 | 255 | 36 | 436 | 9 | 109 | 6 | 73 | 862 | 10447 |
| Alternative D, Sevier-Escalante Desert Alternative | -- | -- | 57 | 690 | 197 | 2388 | 306 | 3708 | -- | -- | 20 | 243 | 35 | 424 | 9 | 109 | -- | -- | 624 | 7563 |
| Alternative E, West Salt Lake Alternative | -- | -- | 35 | 424 | 169 | 2049 | 516 | 6254 | -- | -- | 17 | 206 | 11 | 133 | -- | --- | -- | -- | 748 | 9066 |
| Alternative F, Provo Canyon Alternative | -- | -- | 125 | 1516 | 202 | 2448 | 271 | 3285 | -- | -- | 7 | 85 | 14 | 170 | -- | --- | -- | -- | 619 | 7503 |
| Alternative Variation 2, Thistle Creek Variation | -- | -- | 40 | 485 | 253 | 2772 | 270 | 3273 | -- | -- | 20 | 243 | 25 | 303 | 9 | 109 | -- | -- | 617 | 7478 |
| Alternative Variation 3, East Las Vegas Variation | -- | -- | 67 | 812 | 238 | 2885 | 244 | 2957 | -- | -- | 20 | 243 | 35 | 424 | 9 | 109 | -- | -- | 613 | 7430 |
| Alternative Variation 4, Fort Mojave Variation | -- | -- | 32 | 388 | 254 | 3078 | 260 | 3151 | -- | -- | 20 | 242 | 35 | 425 | 9 | 109 | -- | -- | 610 | 7393 |
| Alternative Variation 5, Mill Creek Variation | -- | -- | 36 | 436 | 242 | 2933 | 270 | 3272 | -- | -- | 20 | 243 | 27 | 327 | 22 | 267 | -- | -- | 618 | 7490 |
| Alternative Variation 6, Daniels Canyon Variation | -- | -- | 39 | 473 | 242 | 2933 | 269 | 3260 | -- | -- | 34 | 412 | 26 | 316 | 3 | 36 | 1 | 12 | 614 | 7442 |

NOTES: Pipeline acreage figures are based upon a 100 foot-wide construction corridor.

ENVIRONMENTAL CONSEQUENCES

The Contrast Rating System within BLM's Visual Resource Management System and the duration of visual impact permitted by each Visual Quality Objective (VQO) determined by the Forest Service were used to determine the anticipated impacts of the proposed project, alternatives, and variations on the visual resources. The VRM classes and VQO's identified in the Affected Environment section contain management objectives to indicate the amount of visual impact (modification) that could occur within each class. A significant adverse impact to visual resources would occur if the Proposed Action would create a modification in contrast in terms of form, line, color, and texture to the landform and/or vegetation. A significant adverse impact would also occur if structures were added that would not meet the designated class objective. The severity of impact would be determined by the class in which the feature is located. Areas which would not meet a specified VRM class would be placed in VRM Class 5 (indicating rehabilitation would be necessary) nor would not meet a specified VQO would be labeled as Unacceptable Modification (also indicating rehabilitation would be necessary). A more detailed explanation of this process is found in appendix C.

The contrast evaluation concerns only the residual effects of construction activities such as surface scars, removal of vegetation, and placement of permanent structures in viewed areas. Construction crews and equipment would be only temporarily visible, and would not have a significant impact on the visual resources of the area involved. Pipeline and ancillary facility operation, maintenance, and abandonment would have little or no further adverse effect on the visual landscape.

Contrasts between the existing vegetation and the condition, which would remain for a long term duration, would be the predominant adverse impact of the pipeline. The patterned shrub species, such as sagebrush, creosote bush, shadscale, and greasewood would easily be affected by the straight lines created by the right-of-way clearing technique. Because of the regenerative nature of these species, including poor growing conditions, such impacts would generally be long term. Where revegetation would be expected to occur naturally, or would be induced, a color contrast between the two stages of vegetation would be expected, which would fortify the contrast in line. In fewer locations modifications to the landform in steep terrain would create adverse long term visual impacts until soil colors would change through the weathering process to blend in, or vegetation would cover the scars.

Tables 2 thru 8 summarize visual impacts of the Proposed Action, its variations, and alternatives. Refer to the EIS Graphic Supplement for mileposts and route locations.

The total number of miles and acres which would undergo significant adverse visual resource impacts if the Proposed Action, alternative routes, or variations were to be constructed are summarized by VRM class and VQO in table 9.

TABLE 2

VISUAL IMPACTS OF THE PROPOSED ACTION AND ROUTE VARIATIONS

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score ^{2/} L/V/S | VRM Class ^{3/} and/or VQO |
|------------------------|-------------------------------|--|--------------------|--|---|---------------------------------------|
| Proposed Action | | | | | | |
| <u>Pipeline</u> | | | | | | |
| MP 0-85 | Vegetation | Interstate 80 | short term | L | ---- | 3, 4 |
| MP 85-110 | Vegetation | Interstate 80 | long term | M | -/22/- | 2 |
| MP 110-115 | Vegetation | Kamas Valley | long term | L | ---- | 4 |
| MP 115-118 | Vegetation | Proposed Currant Creek recreation area access | long term | L | ---- | 3, 4 |
| MP 118-123 | Vegetation | Proposed Currant Creek recreation area access | long term | M | -/27/- | R, PR |
| MP 123-129 | Vegetation | Primitive road | long term | L | ---- | M |
| MP 129-130 | Vegetation | Primitive road | long term | L | ---- | M |
| MP 130-133 | Vegetation | U.S. Highway 40 | long term | H | -/22/- | R |
| MP 133-137 | Vegetation | Recreation areas | long term | H | -/18/- | PR |
| MP 137-144 | Vegetation | Recreation areas | long term | H | -/15/- | R |
| MP 144-153 | Vegetation | Proposed access to proposed Fifth Water Reservoir | long term | L | ---- | PR, Scattered M |
| MP 153-158 | Landform, vegetation | U.S. Highway 6 | long term | H | 15/19/- | 2, R, PR |
| MP 158-172 | Landform, vegetation | Primitive road | long term | L | ---- | 3, PR, scattered M |
| MP 172-177 | Landform, vegetation | Highway 89 | long term | L | ---- | 3 |
| MP 177-183 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 183-190 | Vegetation | Highway 132 | long term | M | -/23/- | 3 |
| MP 190-195 | Landform, vegetation | Nephi, Highway 132 | long term | M | 22/19/- | 3 |
| MP 195-232 | Vegetation | Interstate 15, Nephi | long term | L | ---- | 3 |
| MP 232-235 | Landform, Vegetation | Interstate 15 | long term | H | 26/22/- | 2 |

TABLE 2 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score ^{2/} L/V/S | VRM Class ^{3/} and/or VQO |
|--|-------------------------------|---|------------------------|--|---|---------------------------------------|
| <u>P'peline</u> | | | | | | |
| MP 235-284 | Vegetation | Interstate 15, Fillmore | short to long term | L | ---- | 3 |
| MP 284-289 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 289-291 | Vegetation | Interstate 15 | long term | L | ---- | 3 |
| MP 291-302 | Vegetation | Milford | long term | L | ---- | 4 |
| MP 302-311 | Vegetation | Milford | temporary to long term | L | ---- | 3 |
| MP 311-370 | Vegetation | Newcastle, seldom seen | long term | L | ---- | 4 |
| MP 370-393 | Landform, vegetation | Highway 18 | long term | M | 17/17/- | 3, R, PR |
| MP 393-405 | Vegetation | primitive roads | long term | L | ---- | 4 |
| MP 405-435 | Vegetation | primitive trails | long term | L | ---- | 4 |
| MP 435-491 | Vegetation | Interstate 15 | long term | L | ---- | 3 |
| MP 491-493 | Vegetation | Las Vegas Dunes | long term | M | ---- | 3 |
| MP 493-495 | Vegetation | Recreation Lands | | | | |
| MP 495-505 | Vegetation | Nellis AFB | long term | L | ---- | 3 |
| | Landform, | Frenchman Mtn. | long term | H | 17/18/- | 3 |
| | vegetation | Rainbow Gardens | | | | |
| MP 505-507 | Landform, | Las Vegas Wash | short term | L | * | 2 |
| | vegetation | | | | | |
| MP 507-512 | Vegetation | Urban areas | long term | L | ---- | 3 |
| MP 512-518 | Vegetation | U.S. Highway 93/95/466, | long term | L | ---- | 3 |
| | | Proposed McCullough Mountain, N.N.L. | | | | |
| MP 518-535 | Vegetation | U.S. Highway 95 | long term | L | ---- | 4 |
| MP 535-610(END) | Vegetation | Highway 95, Inter-tate 80 | long term | L | ---- | 3,4 |
| <u>Ancillary Facilities</u> | | | | | | |
| Sage Compressor Station and Maintenance Base | | | | | | |
| MP 0 | Vegetation, structure | Highway 51/89 & Highway 89/30N | long term | H | -/21/29 | 4 |

TABLE 2 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class ^{3/} and/or VQO |
|--|-------------------------------|---|--------------------|--|---|---------------------------------------|
| Heber City Maintenance Base | | | | | | |
| Heber City, UT Vicinity | Vegetation, structure | Heber City, Wasatch Mtn. State Park | long term | L | * | 2 |
| Nephi Maintenance Base | | | | | | |
| Nephi, UT Vicinity | Vegetation, structure | Nephi, Interstate 15 | long term | L | * | 2 |
| Cedar City Maintenance Base | | | | | | |
| Cedar City, UT Vicinity | Vegetation, structure | Cedar City, Interstate 15 | long term | H | -/22/26 | 3 |
| Las Vegas Maintenance Base | | | | | | |
| Las Vegas, NV Vicinity | Vegetation, structure | Las Vegas, Interstate 15 | long term | M | * | 3 |
| Variation 1, Strawberry Reservoir Variation (Eliminated from further detailed analysis) | | | | | | |
| Variation 2, Thistle Creek Variation | | | | | | |
| <u>Pipeline</u> | | | | | | |
| MP 0-10 | Landform, vegetation | U.S. Highway 6/50 | long term | H | 26/22/- | 2 |
| MP 10-23 | Landform, vegetation | U.S. Highway 89 | long term | M | 22/18/- | 3 |
| MP 23-27(END) | Vegetation | Seldom seen | long term | L | ---- | 3 |

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score 2/ L/V/S | VPM Class 3/ and/or VQO |
|----------|-------------------------------|-----------------------|--------------------|--|--|----------------------------|
|----------|-------------------------------|-----------------------|--------------------|--|--|----------------------------|

| <u>Ancillary Facilities</u> | |
|---|------------|
| No ancillary facilities along the variation would create any adverse significant impacts. | |
| Variation 3, East Las Vegas Variation | |
| <u>Pipeline</u> | |
| MP 0-3 | Vegetation |
| MP 3-8 | Vegetation |
| MP 8-14 | Vegetation |
| MP 14-27 | Vegetation |
| MP 27-42 | Vegetation |
| MP 42-59(END) | Vegetation |

No ancillary facilities along the variation would create any adverse significant impacts.

Variation 4, Fort Mojave Variation

| <u>Pipeline</u> | Vegetation | long term | L | ----- | 3 |
|-----------------|---------------------------|-----------|---|-------|---|
| IP 0-10(END) | Ft. Mojave Indian Res. | | | | |

o ancillary facilities along the variation would create any adverse significant impacts.

TABLE 2 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score ^{2/} L/V/S | VRM Class ^{3/} and/or VQO |
|---|-------------------------------|-------------------------------------|--------------------|--|---|---------------------------------------|
| Variation 5, Mill Creek Variation | | | | | | |
| <u>Pipeline</u> | | | | | | |
| MP 0-6 | Landform, vegetation | U.S. Highway 6/50 | long term | H | 22/16/- | 2 |
| MP 6-19 | Landform, vegetation | primitive roads | long term | L | ---- | M |
| MP 19-21(END) | Vegetation | Indianola, U.S. Highway 89 | long term | L | ---- | PR |
| <u>Ancillary Facilities</u> | | | | | | |
| No ancillary facilities along the variation would create any adverse significant impacts. | | | | | | |
| Variation 6, Daniels Canyon Variation | | | | | | |
| <u>Pipeline</u> | | | | | | |
| MP 0-5 | Landform, vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 5-6 | Vegetation | Heber City, U.S. Highway 40, 189 | long term | H | -/19/- | 2 |
| MP 6-11 | Vegetation | Heber City U.S. Highway 40 | short to long term | L | * | 2 |
| MP 11-30 | Landform, vegetation | U.S. Highway 40, Daniels Creek | long term | H | 24/18/- | 2,R |

TABLE 3

VISUAL IMPACTS OF ALTERNATIVE A, NORTHERN SYSTEMS ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class ^{3/} |
|------------------------------------|-------------------------------|-----------------------------------|--------------------|--|---|-------------------------|
| <u>Pipeline</u> | | | | | | |
| Kemmerer Loop | | | | | | |
| MP 0-10 | Vegetation | U.S. Highway 30N, Nugget | long term | L | --- | 3 |
| MP 10-15 | Vegetation | Primitive roads | long term | L | --- | 3 |
| MP 15-22(END) | Vegetation | Primitive roads | long term | L | --- | 4 |
| Pegram Loop | | | | | | |
| MP 33-5-38 | Vegetation | Primitive roads | long term | L | --- | 4 |
| MP 38-40.5(END) | Vegetation | U.S. Highway 30N | long term | L | --- | 3 |
| Soda Springs Loop | | | | | | |
| MP 66-72 | Vegetation | U.S. Highway 30N | long term | L | --- | 4 |
| MP 72-78 | Vegetation | Soda Springs | temporary | L | --- | 3 |
| MP 78-85 | Vegetation | Soda Point Reservoir | short term | M | * | 2 |
| MP 85-89(END) | Vegetation | U.S. Highway 30N, (background) | temporary | L | --- | 4 |
| Pocatello Loop | | | | | | |
| MP 142-154 | Vegetation | Interstate 15W | temporary | L | --- | 4 |
| MP 154-160 | Vegetation | Interstate 15W | short term | M | * | 2,4 |
| MP 160-167(END) | Vegetation | Interstate 15W | short term | M | * | 2 |
| Brentwood-Panoche Junction Section | | | | | | |
| MP 0-14 | Vegetation | Rural residences | temporary | L | --- | 4 |
| MP 14-84 | Vegetation | Interstate 5 | temporary | L | --- | 4 |
| MP 84-92 | Vegetation | Seldom seen | temporary | L | --- | 4 |
| MP 92-120(END) | Vegetation | Interstate 5 | temporary | L | --- | 4 |

TABLE 3 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Durat'on of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S ^{2/} | VRM Class ^{3/} |
|---|-------------------------------|---------------------------|--------------------|--|---|-------------------------|
| <u>Pipeline</u> | | | | | | |
| Southern California Gas - PG&E Connection | | | | | | |
| MP 0-28(END) | Vegetation | seldom seen | long term | L | ---- | 4 |
| <u>Ancillary Facilities</u> | | | | | | |
| Stanfield Compressor Station | | | | | | |
| Stanfield, OR Vicinity | Vegetation, structure | rural houses and roads | long term | M | -/15/29 | 4 |

^{1/} Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

^{2/} Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).
- L=Landform; V=Vegetation; S=Structure.
- *Indicates contrast rating was conducted and no significant contrast would occur.
(See appendix C for an explanation of the Contrast Rating System).

^{3/} See appendix A for description of VRM Class ratings.

TABLE 4

VISUAL IMPACTS OF ALTERNATIVE B, SANPETE VALLEY ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating | | VRM Class |
|---|-------------------------------|-----------------------------------|--------------------|--|-----------------|-------|-----------|
| | | | | | Feature Score | L/V/S | |
| <u>Pipeline</u> | | | | | | | |
| (Refer to Proposed Action impacts between MP 0-176) <u>4/</u> | | | | | | | |
| MP 0-4 | Vegetation | U.S. Highway 89 | long term | L | ---- | | 3 |
| MP 4-95 | Vegetation | communities | short term | L | ---- | | 3 |
| MP 95-105 | Landform, vegetation | U.S. Highway 89 | long term | H | 26/18/- | | 2 |
| MP 105-110 | Vegetation | U.S. Highway 89, Marysvale | long term | L | ---- | | 3 |
| MP 110-118 | Vegetation | U.S. Highway 89 | long term | L | ---- | | 4 |
| MP 118-121 | Vegetation | U.S. Highway 89 | long term | L | ---- | | 3 |
| MP 121-124 | Vegetation | Junction U.S. Highway 89 | long term | H | -/22/- | | 4 |
| MP 124-129 | Vegetation | Circleville U.S. Highway 89, | long term | L | ---- | | 3 |
| MP 129-131 | Landform, vegetation | Circleville U.S. Highway 89 | long term | H | 22/22/- | | 3 |
| MP 131-149 | Vegetation | seldom seen | long term | L | ---- | | 4 |
| MP 149-151 | Vegetation | Interstate 15, U.S. Highway 91 | long term | M | ---- | | 3 |

TABLE 4 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating | | VRM Class ^{3/} |
|---|-------------------------------|---|--------------------|--|-----------------------------|-------|-------------------------|
| | | | | | Feature Score ^{2/} | L/V/S | |
| <u>Pipeline</u> | | | | | | | |
| MP 151-178 | Vegetation | Interstate 15, U.S. Highway 95, Parowan | short to long term | L | ---- | | 3 |
| MP 178-182 | Vegetation | Cedar City, Interstate 15 | long term | L | ---- | | 3,4 |
| MP 182-200(END) | Vegetation | seldom seen | long term | L | ---- | | 4 |
| (Refer to proposed action impacts between MP 356-610) ^{4/} | | | | | | | |

Ancillary Facilities

Same as the Proposed Action.

^{1/} Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).
- L=Landform; V=Vegetation; S=Structure.
- *indicates contrast rating was conducted and no significant contrast would occur.
(See appendix C for an explanation of the Contrast Rating System).

^{3/} See appendix A for description of VRM Class ratings.

^{4/} Milepost inclusions indicated where Alternative B leaves and rejoins the Proposed Action.

TABLE 5

VISUAL IMPACTS OF ALTERNATIVE C, CENTRAL NEVADA ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score 2/ L/V/S | VRM Class 3/ and/or VQO |
|---|-------------------------------|---|-------------------------|--|--|----------------------------|
| <u>Pipeline</u> | | | | | | |
| (Refer to Proposed Action between MP 0-196) <u>4/</u> | | | | | | |
| MP 0-5 | Vegetation | Nephi, Highway 132, Interstate 15 | short to long term | L | * | 2 |
| MP 5-7 | Vegetation | Nephi, H'ghway 132, Interstate 15 | long term | L | * | 2 |
| MP 7-21 | Vegetation | Highway 132 | short to long term | L | * | 2 |
| MP 21-28 | Vegetation | Highway 132 | short to long term | L | * | 2 |
| MP 28-46 | Vegetation | U.S. Highway 6/50 | short to long term | L | ---- | 3 |
| MP 46-63 | Vegetation | Delta | temporary to short term | L | ---- | 3 |
| MP 63-71 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | 3 |
| MP 71-109 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | 4 |
| MP 109-112 | Landform, vegetation | U.S. Highway 6/50 | long term | H | 26/18/- | 3 |
| MP 112-145 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | 4 |
| MP 145-156 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | 3 |
| MP 156-160 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | 4 |
| MP 160-163 | Vegetation | Swamp Cedar | long term | H | -/25/- | 2 |
| MP 163-172 | Vegetation | Natural Area U.S. Highway 6/50 | long term | L | ---- | 4, MM |
| MP 172-173 | Vegetation | U.S. Highway 6/50 | long term | L | ---- | PR |

TABLE 5 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Sggre L/V/S | VRM Class ^{3/} and/or VQO |
|-----------------|-------------------------------|--|------------------------|--|---|---------------------------------------|
| <u>Pipeline</u> | | | | | | |
| MP 173-176 | Landform, vegetation | seldom seen | long term | L | ---- | MM |
| MP 176-177 | Landform, vegetation | U.S. Highway 6/50/93 | long term | H | ---- | PR |
| MP 177-178 | Vegetation | U.S. Highway 6/50/93 | long term | L | ---- | MM |
| MP 178-195 | Vegetation | U.S. Highway 6/50/93 | long term | L | ---- | 4 |
| MP 195-201 | Landform, vegetation | U.S. Highway 6, Ely, recreation site | long term | H | 22/17/1 | 2 |
| MP 201-232 | Vegetation | U.S. Highway 6 | long term | L | ---- | 4 |
| MP 232-237 | Landform, vegetation | U.S. Highway 6, Current Creek Campground | long term | H | 22/18/- | PR |
| MP 237-244 | Vegetation | U.S. Highway 6, Current | temporary to long term | L | ---- | 3 |
| MP 244-263 | Vegetation | U.S. Highway 6 | long term | L | ---- | 4 |
| MP 263-268 | Vegetation | U.S. Highway 6 | long term | L | * | 2 |
| MP 268-274 | Vegetation | U.S. Highway 6 | long term | M | -/22/- | 2 |
| MP 274-278 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 278-280 | Vegetation | U.S. Highway 6 | long term | M | -/18/- | 2 |
| MP 280-287 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 287-289 | Vegetation | U.S. Highway 6 | long term | L | ---- | 4 |
| MP 289-294 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 294-302 | Vegetation | U.S. Highway 6 | long term | L | ---- | 4 |
| MP 302-310 | Vegetation | U.S. Highway 6, State Highway 25, Warm Springs | long term | L | ---- | 3 |
| MP 310-314 | Vegetation | U.S. Highway 6 | long term | H | -/22/- | 2 |
| MP 314-329 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 329-331 | Vegetation | U.S. Highway 6 | long term | M | -/18/- | R, PR |
| MP 331-332 | Vegetation | U.S. Highway 6 | long term | L | ---- | PR, MM |
| MP 332-338 | Vegetation | U.S. Highway 6, Roadside rest area | long term | M | -/18/- | R, PR |

TABLE 5 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class and/or VQO ^{3/} |
|------------------|-------------------------------|------------------------------------|--------------------|--|---|---------------------------------------|
| <u>P' peline</u> | | | | | | |
| MP 338-341 | Vegetation | U.S. Highway 6 | long term | M | -/18/- | R, MM |
| MP 341-356 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 356-358 | Landform, vegetation | Tonopah | long term | M | 22/17/- | 2 |
| MP 358-418 | Vegetation | U.S. Highway 6 | long term | L | ---- | 4 |
| MP 418-465 | Vegetation | U.S. Highway 6 | long term | L | ---- | 3 |
| MP 465-469 | Vegetation | Bishop | temporary | L | ---- | 4 |
| MP 469-486 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 486-488 | Vegetation | U.S. Highway 395, | long term | L | ---- | 3 |
| | | Fish Springs | | | | |
| MP 488-517 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 517-522 | Vegetation | Lone Pine | long term | L | ---- | 3 |
| MP 522-544 | Vegetation | U.S. Highway 395 | long term | L | ---- | 4 |
| MP 544-546 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 546-554 | Vegetation | U.S. Highway 395 | long term | M | -/18/- | 2, 3 |
| MP 554-562 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 562-566 | Vegetation | U.S. Highway 395 | long term | L | * * | 2 |
| MP 566-569 | Vegetation | U.S. Highway 395 | long term | L | * * | 2 |
| MP 569-576 | Vegetation | U.S. Highway 395 | long term | M | -/20/- | 2 |
| MP 576-595 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 595-600 | Vegetation | Seldom seen | long term | L | * * | 2 |
| MP 600-606 | Vegetation | U.S. Highway 395 | long term | M | -/17/- | 2, 3 |
| MP 606-609 | Vegetation | Secondary roads | long term | L | ---- | 3 |
| MP 609-611 | Vegetation | Seldom seen | long term | L | * * | 2, 4 |
| MP 611-632 | Vegetation | U.S. Highway 395 | long term | L | ---- | 3 |
| MP 632-666 (END) | Vegetation | U.S. Highway 395, military base | long term | L | ---- | 4 |

TABLE 5 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class ^{3/} and/or VQO ^{3/} |
|--|-------------------------------|-------------------------------|--------------------|--|---|---|
| <u>Ancillary Facilities</u> | | | | | | |
| Sage Compressor Station and Maintenance Base and the Heber City and Nephi Maintenance Bases are the same as the Proposed Action. | | | | | | |
| <u>Ely Maintenance Base</u> | | | | | | |
| Ely, Nevada Vicinity | Vegetation, structure | Ely | long term | L | ---- | 4 |
| <u>Tonopah Maintenance Base</u> | | | | | | |
| Tonopah, Nevada Vicinity | Vegetation, structure | Tonopah, U.S. Highway 6 | long term | M | -/16/27 | 3 |
| <u>Bishop Maintenance Base</u> | | | | | | |
| Bishop, CA Vicinity | Vegetation, structure | Bishop, U.S. Highway 6 | long term | M | -/15/16 | 3 |
| <u>Inyokern Maintenance Base</u> | | | | | | |
| Inyokern, CA Vicinity | Vegetation, structure | Inyokern, U.S. Highway 395 | long term | H | -/20/27 | 3 |

^{1/}Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

^{2/} Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).

- L=Landform; S=Vegetation; S=Structure.

- *Indicates contrast rating was conducted and no significant contrast would occur.

(See appendix C for an explanation of the Contrast Rating System).

^{3/} See Appendices A and B for description of VRM Class and Visual Quality Objective ratings.

^{4/} Milepost inclusions indicate where Alternative C leaves the Proposed Action.

TABLE 6

VISUAL IMPACTS OF ALTERNATIVE D, SEVIER-ESCALANTE DESERT ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score ^{2/} L/V/S | VRM Class ^{3/} |
|---|-------------------------------|---|------------------------|--|---|-------------------------|
| (Refer to Proposed Action impacts between MP 0-196) ^{4/} | | | | | | |
| MP 0-5 | Vegetation | Nephi, Highway 132, Interstate 15 | short to long term | L | * | 2 |
| MP 5-7 | Vegetation | Nephi, Highway 132, Interstate 15 | long term | L | * | 2 |
| MP 7-21 | Vegetation | Highway 132 | short to long term | L | * | 2 |
| MP 21-28 | Vegetation | Highway 132 | short to long term | L | * | 2 |
| MP 28-67 | Vegetation | Delta Urbanized area | temporary to long term | L | ---- | 3 |
| MP 67-120 | Vegetation | State Highway 257 | long term | L | ---- | 4 |
| MP 120-130 | Vegetation | Milford | temporary to long term | L | ---- | 3 |
| MP 130-182(END) | Vegetation | Seldom seen | temporary to long term | L | ---- | 4 |
| (Refer to Proposed Action impacts between MP 364-610) ^{4/} | | | | | | |

Ancillary Facilities

Same as the Proposed Action.

^{1/} Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

^{2/} Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).
- L=Landform; V=Vegetation; S=Structure.
- * indicates contrast rating was conducted and no significant contrast would occur.

(See appendix C for an explanation of the Contrast Rating System).

^{3/} See appendix A for description of VRM Class ratings.

^{4/} Milepost inclusions indicate where Alternative D leaves and rejoins the Proposed Action.

TABLE 7

VISUAL IMPACTS OF ALTERNATIVE E, WEST SALT LAKE ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Sg9re L/V/S | VRM Class 3/ and/or VQ0 |
|--------------------------------|-------------------------------|---|------------------------|--|---|----------------------------|
| <u>Pipeline</u> | | | | | | |
| Semmerer Loop | | | | | | |
| TP 0-10 | Vegetation | U.S. Highway 30N, Nugget | long term | L | ---- | 3 |
| TP 10-15 | Vegetation | Primitive roads | long term | L | ---- | 3 |
| TP 15-22(END) | Vegetation | Primitive roads | long term | L | ---- | 4 |
| Egrem Loop | | | | | | |
| TP 33.5-38 | Vegetation | Primitive roads | long term | L | ---- | 4 |
| TP 38-40(END) | Vegetation | U.S. Highway 30N | long term | L | ---- | 3 |
| Beginning at Montpelier, Idaho | | | | | | |
| TP 0-5 | Vegetation | U.S. Highway 89, State Highway 36, Montpelier | short term | L | ---- | 4 |
| TP 5-11 | Vegetation | State Highway 36 | temporary to long term | L | ---- | 4 |
| TP 11-18 | Vegetation | State Highway 36 | long term | H | -/29/- | R |
| TP 18-23 | Landform, vegetation | State Highway 36 | long term | H | 22/27/- | R |
| TP 23-28 | Vegetation | State Highway 36 | temporary to long term | L | ---- | 4 |
| TP 28-66 | Vegetation | Preston, Weston | temporary to long term | L | ---- | 4 |
| TP 66-68 | Vegetation | Valley communities | long term | L | ---- | 4 |
| TP 68-88 | Vegetation | S all communities, Interstate 15 (U.S. Highway 191) Interstate 80N | temporary | | | 4 |

TABLE 7 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class 3/ and/or VQO |
|---|-------------------------------|--|------------------------|--|---|----------------------------|
| <u>Pipeline</u> | | | | | | |
| MP 88-93 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 93-102 | Vegetation | Seldom seen | temporary | L | ---- | 4 |
| MP 102-156 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 156-213 | Landform | Seldom seen | long term | L | ---- | 4 |
| MP 213-231 | Landform | Interstate 80 | long term | L | ---- | 4 |
| MP 231-248 | Landform, vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 248-253 | Vegetation | Wilderness | long term | L | ---- | 4 |
| MP 253-286 | Vegetation | Study Area Skull Valley Indian Res. | long term | L | ---- | 4 |
| MP 286-296 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 296-304 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 304-318 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 318-330 | Vegetation | Primitive roads | long term | L | ---- | 3 |
| MP 330-363(END) | Vegetation | Delta Urbanized area | temporary to long term | L | ---- | 3 |
| (Refer to Proposed Action Impacts between MP 254-610) ^{4/} | | | | | | |
| <u>Ancillary Facilities</u> | | | | | | |
| Montpelier Compressor Station and Maintenance Base. | | | | | | |
| MP 0 | Vegetation, structure | Montpelier, U.S. Highways 30N and 89 | long term | H | -/15/29 | 4 |

TABLE 7 (cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class 3/ and/or VQO |
|-------------------------|----------------------------|---------------------|--------------------|---|-------------------------------------|-------------------------|
| <u>Pipeline</u> | | | | | | |
| Lucin Maintenance Base | | | | | | |
| Lucin, Utah Vicinity | Vegetation, structure | Lucin | long term | M | * | 4 |
| Dugway Maintenance Base | | | | | | |
| Dugway, Utah Vicinity | Vegetation, structure | Dugway, Highway 198 | long term | M | * | 4 |

^{1/} Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

^{2/} Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).
- L=Landform; V=Vegetation; S=Structure.
- *Indicates contrast rating was conducted and no significant contrast would occur.
(See appendix C for an explanation of the Contrast Rating System).

^{3/} See appendix A for description of VRM Class ratings.

^{4/} Milepost inclusions indicate where Alternative E rejoins the Proposed Action.

TABLE 8

VISUAL IMPACTS OF ALTERNATIVE F, PROVO CANYON ALTERNATIVE

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast | Contrast Rating | |
|--|----------------------------|-------------------------|--------------------|---------------------------------|---------------------------|----------------------------|
| | | | | | 1/ Feature Score L/V/S | VRM Class 3/ and/or VQO |
| (Refer to Proposed Action impacts between MP 0-108) 4/ | | | | | | |
| MP 0-7 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 7-15 | Vegetation | Heber City area | long term | M | -/18/- | 2 |
| MP 15-21 | Landform, vegetation | Heber City area | long term | H | 24/15/- | 2 |
| MP 21-30 | Landform, vegetation | Wasatch Mtn. State Park | long term | H | 16/12/- | 2 |
| MP 30-32 | Landform, vegetation | Deer Creek Res. | long term | H | 15/17/- | R, 2 |
| MP 32-33 | Vegetation | Urbanized areas | long term | H | -/18/- | PR, 3 |
| MP 33-35 | Vegetation | Urbanized areas | long term | H | -/18/- | R, PR |
| MP 35-38 | Vegetation | Urbanized areas | long term | H | -/18/- | PR, 2 |
| MP 38-53 | Landform, vegetation | Urbanized areas | long term | H | 13/18/- | 2 |
| MP 53-90 | Vegetation | U.S. Highway 6/50 | long term | L | * | 2 |
| MP 90-96 | Vegetation | Seldom seen | long term | L | ---- | 4 |
| MP 96-115(END) | Vegetation | U.S. Highway 91 | long term | L | * | 2 |
| (Refer to Proposed Action impacts between MP 214-610) 4/ | | | | | | |

TABLE 8 (Cont'd)

| Milepost | Affected Landscape Feature | Critical Viewpoint | Duration of Impact | Chance for Significant Contrast ^{1/} | Contrast Rating Feature Score L/V/S | VRM Class ^{3/} and/or VQO |
|----------|-------------------------------|-----------------------|--------------------|--|---|---------------------------------------|
|----------|-------------------------------|-----------------------|--------------------|--|---|---------------------------------------|

Ancillary Facilities

Same as the Proposed Action.

^{1/} Indicates estimated chance of pipeline construction causing a high (H), medium (M), or low (L) significant degree of visual contrast.

^{2/} Contrast Rating Feature Scores:

- A lack of score indicates no contrast rating was conducted, since it was pre-determined that a significant contrast would not occur (see Methodology for a further explanation).
- L=Landform; V=Vegetation; S=Structure.
- *indicates contrast rating was conducted and no significant contrast would occur.
(See appendix C for an explanation of the Contrast Rating System).

^{3/} See appendices A and B for description of VRM Class and Visual Quality Objective ratings.

^{4/} Milepost inclusions indicate where Alternative E rejoins the Proposed Action.

TABLE 9

SUMMARY OF SIGNIFICANT ADVERSE VISUAL RESOURCE IMPACTS

| NUMBER OF MILES AND ACRES IN EACH VRM CLASS/VQO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|----|-----|------|---------|-----|-----|------|---------|----|----|-----|---------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|-----|-----|-----|--|--|----|--|--|--|--------|--|
| Pipeline - Route Name | Class 1 | | | | Class 2 | | | | Class 3 | | | | Class 4 | | | | P | | | | R | | | | PR | | | | M | | | | MM | | | | Totals | |
| | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | MI | AC | | | | | | | | |
| Proposed Action | -- | -- | 30 | 364 | 29 | 352 | --- | ---- | -- | -- | 20 | 242 | 18 | 216 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 97 | 117 | | | | | | | | |
| Alternative, Northern Systems Alternative | NO SIGNIFICANT ADVERSE VISUAL RESOURCE IMPACTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alternative B, Sanpete Valley | -- | -- | 37 | 449 | 19 | 230 | 3 | 36 | -- | -- | 20 | 243 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 97 | 117 | | | | | | | | |
| Alternative C, Central Nevada | -- | -- | 64 | 775 | 22 | 276 | --- | ---- | -- | -- | 21 | 255 | 16 | 194 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 1 | 12 | 124 | 150 | | | | | | | | | | |
| Alternative D, Sevier- Escalante Desert Alternative | -- | -- | 27 | 327 | 29 | 352 | --- | ---- | -- | -- | 20 | 242 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 94 | 113 | | | | | | | | |
| Alternative E, West Salt Lake | -- | -- | --- | ---- | 17 | 206 | --- | ---- | -- | -- | 17 | 206 | 11 | 133 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 45 | 51 | | | | | | | | |
| Alternative F, Provo Canyon | -- | -- | 67 | 812 | 17 | 206 | --- | ---- | -- | -- | 7 | 85 | 14 | 170 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 105 | 127 | | | | | | | | |
| Alternative 2, Thistle Creek | -- | -- | 38 | 461 | 42 | 509 | --- | ---- | -- | -- | 20 | 242 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 118 | 143 | | | | | | | | |
| Variation 3, East Las Vegas | -- | -- | 50 | 606 | 19 | 231 | --- | ---- | -- | -- | 20 | 242 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 107 | 129 | | | | | | | | |
| Variation 4, Fort Mojave | -- | -- | 30 | 364 | 29 | 352 | --- | ---- | -- | -- | 20 | 242 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 97 | 117 | | | | | | | | |
| Variation 5, Mill Creek | -- | -- | 34 | 412 | 29 | 352 | --- | ---- | -- | -- | 20 | 242 | 18 | 218 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 101 | 122 | | | | | | | | |
| Variation 6, Daniles Canyon | -- | -- | 32 | 388 | 29 | 351 | --- | ---- | -- | -- | 31 | 376 | 11 | 33 | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | -- | --- | 103 | 121 | | | | | | | | |
| Variation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

NOTES: Acreage figures are based upon a 100 foot-wide construction corridor.

TABLE 9 (Cont'd)

| Ancillary Facilities | Class 1 | Class 2 | Class 3 | Class 4 | P | R | PR | M | MM | Totals |
|--|---------|---------|---------|---------|-------|-------|-------|-------|-------|--------|
| Ancillary Facilities - Route Name | ACRES | ACRES | ACRES | ACRES | ACRES | ACRES | ACRES | ACRES | ACRES | ACRES |
| Proposed Action | | | | | | | | | | 20 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (1) | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- |
| Alternative A, Northern Systems Alternative | | | | | | | | | | 15 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Alternative B, Sarpate Valley Alternative | | | | | | | | | | 20 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (1) | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- |
| Alternative C, Central Nevada Alternative | | | | | | | | | | 30 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (3) | -- | -- | 15 | -- | -- | -- | -- | -- | -- | -- |
| Alternative D, Sevier-Escalante Desert Alternative | | | | | | | | | | 20 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (1) | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- |
| Alternative E, West Salt Lake Alternative | | | | | | | | | | 20 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (1) | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- |
| Alternative F, Provo Canyon Alternative | | | | | | | | | | 20 |
| Compressor Station (1) | -- | -- | -- | 15 | -- | -- | -- | -- | -- | -- |
| Maintenance Bases (1) | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- |

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APPENDIX A

THE BLM VISUAL RESOURCE MANAGEMENT SYSTEM ^{1/}

General

The Visual Resource Management (VRM) system is an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality.

The system is based on research that has produced ways of assessing aesthetic qualities of the landscape in objective terms. What had been considered extremely subjective (aesthetic judgment, particularly concerning the landscape) was found to have identifiable, consistent qualities that can be described and measured. Whatever the terrain (and whoever the observer), perception of visual quality in a landscape seems to be based on three common principles:

-Landscape character is primarily determined by the four basic visual elements of form, line, color, and texture. Although all four elements are present in every landscape, they exert varying degrees of influence.

^{1/} Based upon:

U.S. Department of the Interior, Bureau of Land Management. 1978. Manual Series 8400-Visual Resource Management. U.S. Government Printing Office: Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1980. Visual Resource Management Program. U.S. Government Printing Office: Washington, D.C.

-The stronger the influence exerted by these elements, the more interesting the landscape.

-The more visual variety in a landscape, the more aesthetically pleasing the landscape. Variety without harmony, however, is unattractive, particularly in terms of alterations (cultural modifications) that are made without care.

The VRM system (see figure A-1 for flow diagram) involves a four-step process including 1) determining the scenic quality of the landscape, 2) measuring the visual sensitivity of an area, 3) determining distance zones, and 4) compiling all three pieces of information into management classes for guidance in assessing environmental reports.

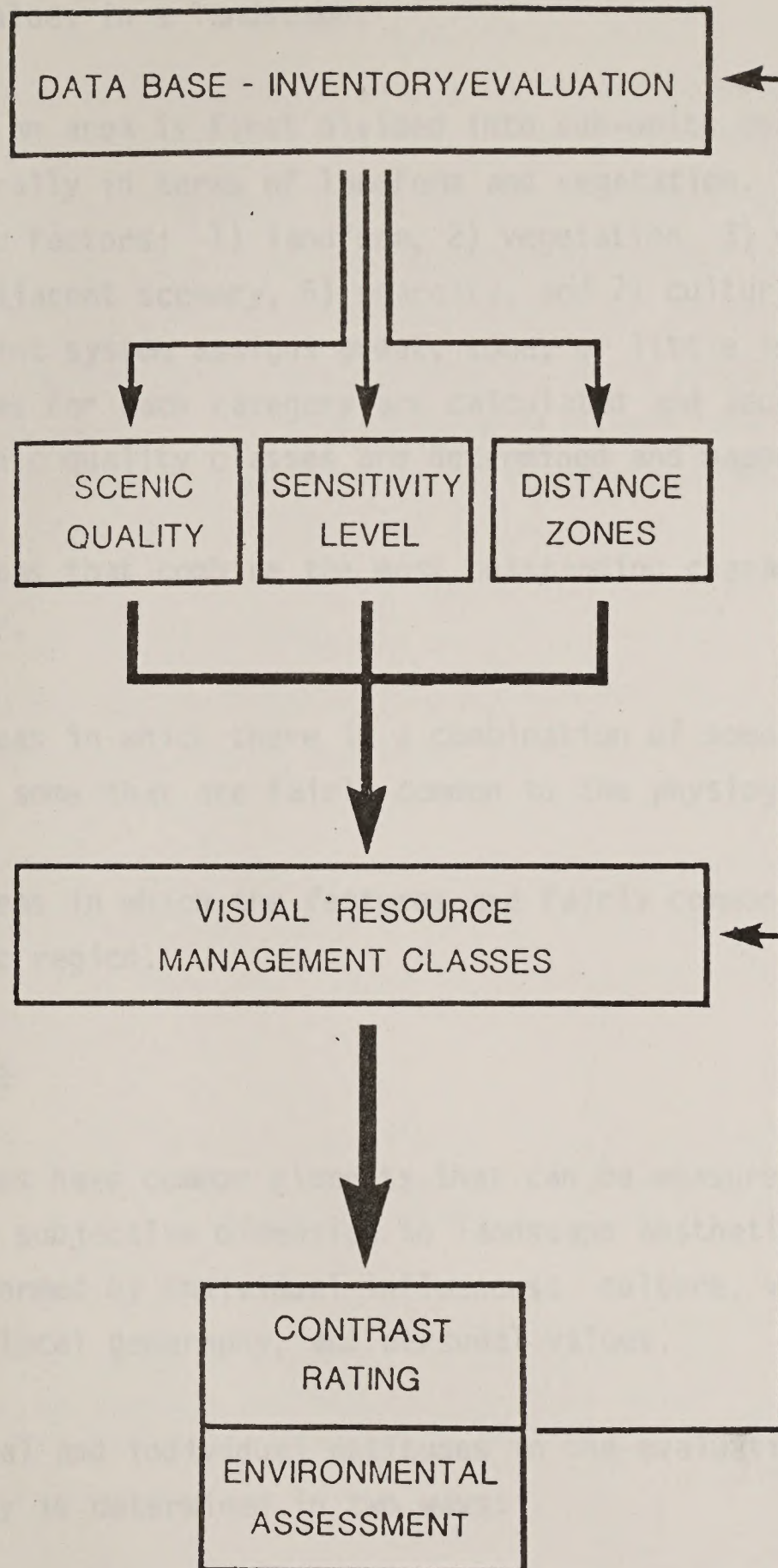


FIGURE A-1 THE VISUAL RESOURCES
MANAGEMENT SYSTEM PROCESS

Scenic Quality

Scenic quality is perhaps best described as the overall impression retained after driving through, walking through, or flying over an area of land. In the VRM process, rating scenic quality requires a brief description of the existing scenic values in a landscape.

When inventoried, an area is first divided into sub-units that appear homogeneous, generally in terms of landform and vegetation. Each area is then rated by seven key factors: 1) landform, 2) vegetation, 3) water, 4) color, 5) influence of adjacent scenery, 6) scarcity, and 7) cultural modification. A standardized point system assigns great, some, or little importance to each factor. The values for each category are calculated and according to total points, three scenic quality classes are determined and mapped:

- Class A - Areas that combine the most outstanding characteristics of each rating factor.

- Class B - Areas in which there is a combination of some outstanding features and some that are fairly common to the physiographic region.

- Class C - Areas in which the features are fairly common to the physiographic region.

Sensitivity Levels

Although landscapes have common elements that can be measured, there is obviously still a subjective dimension to landscape aesthetics. Each viewer's perceptions are formed by individual influences: culture, visual training, familiarity with local geography, and personal values.

To measure regional and individual attitudes in the evaluation of a landscape, visual sensitivity is determined in two ways:

-Use volume - Frequency of travel through an area (by road, trail, and river) and use of that area (for recreation, camping, and events) are tabulated. The area is then assigned a high, medium, or low rating according to predetermined classifications.

-User or public reaction - Public groups are familiarized with the area (if necessary) and asked to respond to activities that will modify that landscape. The concern expressed about proposed changes in scenic quality is also rated high, medium, or low.

The various combinations of use volume and user reaction for each area are rated by a matrix to an overall sensitivity rating of high, medium, or low. A map is then developed that illustrates final sensitivity levels.

Distance Zones

The visual quality of a landscape (and user reaction) may be magnified or diminished by the visibility of the landscape from major viewing routes and key observation points.

A landscape scene or "seen area" can be divided into three basic distance zones: 1) foreground/middleground, 2) background, and 3) seldom-seen. ^{2/}

^{2/} Foreground-Middleground Zone. This is the area that can be seen from a travel route or sensitivity area for a distance of 3 of 5 miles where management activities might be viewed in detail.

Background Zone. This is the remaining area which can be seen from each travel route to approximately 15 miles.

Seldom-Seen Zone. These lands are identified through the seen area analysis as unseen or beyond the approximate 15-mile limit from key observation points.

Because areas that are closer have a greater effect on the observer, such areas require more attention than areas farther away. Distance zones allow this consideration of the proximity of the observer to the landscape.

Selection of the critical points and accurate assessment of distance zones require some judgment. Where several routes exist, what is foreground from one route may be background from another. The more restrictive designation is, thus, used. Atmospheric conditions may also modify the perception of distance.

The process culminates in the preparation of a final distance zone map.

Management Classes

Management classes describe the different degrees of modification allowed to the basic elements of the landscape. Class designations are derived from an overlay technique that combines the maps of scenic quality, sensitivity levels, and distance zones. The overlays are used to identify areas with similar combinations of factors. These areas are assigned to one of five management classes according to predetermined criteria. The resulting map of contiguous areas sharing the same VRM class is used to assess the visual impact of proposed development.

The five classes are:

- Class 1: This class provides primarily for natural ecological changes; management activities are to be restricted and are not to attract attention.
- Class 2: Changes in basic elements by management activities should not be evident in the characteristic landscape.

- Class 3: Contrasts to the basic elements may be evident and begin to attract attention, but they should remain subordinate to the existing characteristic landscape.
- Class 4: Alterations may attract attention but should repeat the form, line, color, and texture elements of the characteristic landscape.
- Class 5: Rehabilitation is needed to restore the landscape to the character of the surrounding landscape.

APPENDIX B

THE U.S. FOREST SERVICE VISUAL MANAGEMENT SYSTEM ^{1/}

General

The Visual Management System (VMS) establishes criteria for identification and classification of scenic quality as well as aesthetic concern for that quality on National Forest Lands. The process is based upon the concept of establishing quality objectives for alteration of the visual resource by recognizing the great variation in visual strength of the various types of natural landscapes and their inherent capabilities to accept change.

The process (see figure B-1 for flow diagram) is based upon a particular landscape being placed within a framework for analysis. The framework is the character type, or common distinguishing visual characteristics of landforms, water forms, and vegetative patterns based upon physiographic regions as defined by Nevin M. Fenneman.^{2/} The characteristic landscape is the naturally established landscape being viewed, which serves as the final basis for analysis and means of comparison when judging the appropriateness of a management activity against the prescribed Visual Quality Objective (VQO). (See appendix C for determining acceptable levels of visual contrast.)

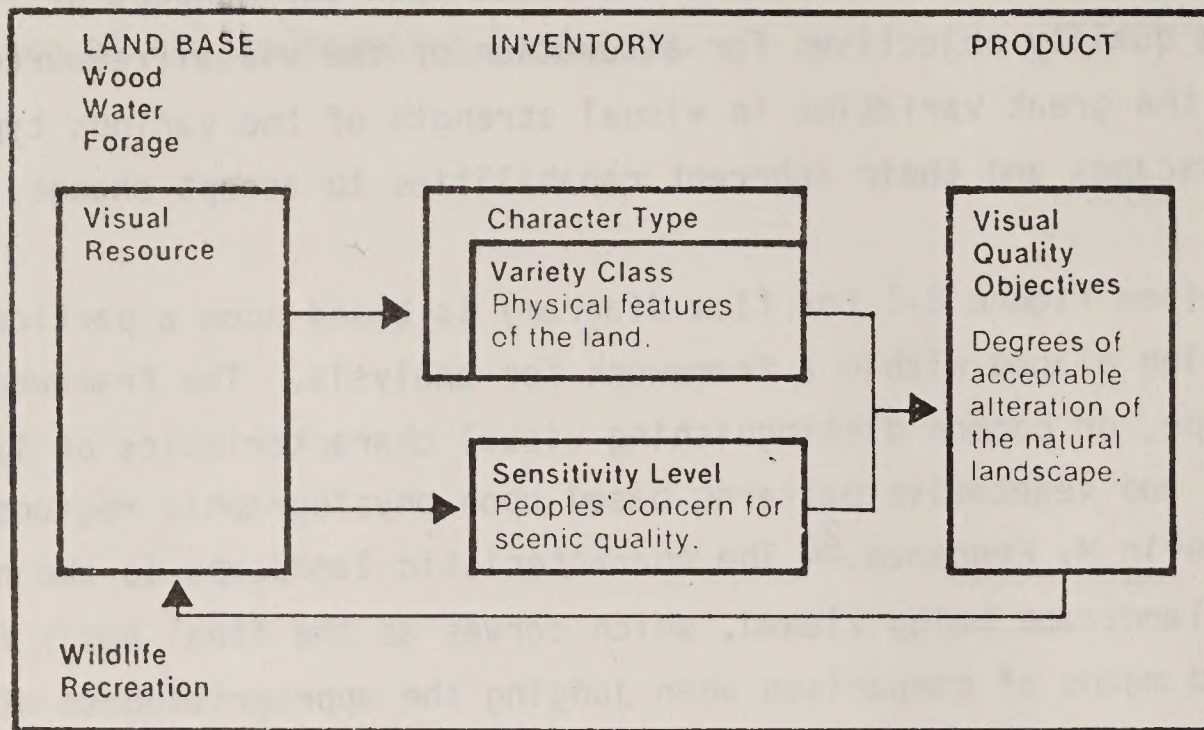
^{1/} Based upon:

U.S. Department of Agriculture, Forest Service. 1974. Agriculture Handbook Number 462, Chapter 1, -The Visual Management System. U.S. Government Printing Office. Washington, D.C.

^{2/} Fenneman, Nevin M. 1931. Physiography of the Western United States. New York and London: McGraw-Hill Book Company.

Figure B-1:

THE VISUAL MANAGEMENT SYSTEM PROCESS



The visual quality objectives (VQO) incorporate the extreme variability of the land's scenic quality, the visual sensitivity of the land, and the ability of various landscapes to undergo alternation.

Variety Classes

Variety classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality. The classification is based on the premise that all landscapes have some

value, but those with the most variety or diversity have the greatest potential for high scenic value. There are three variety classes which identify the scenic quality of the natural landscape:

-Class 3, Common -

Sensitivity Levels

-Class A, Distinctive -

Areas where features of landform, vegetative patterns, water forms and rock formations are of unusual or outstanding visual quality. They are usually not common in the character type.

-Class B, Common -

Areas where features contain variety in form, line, color, and texture or combinations thereof, but which tend to be common throughout the character type and are not outstanding in visual quality.

-Class C, Minimal -

Areas whose features have little change in form, line, color, or texture. Includes all areas not found under Classes A and B.

Sensitivity Levels

Sensitivity levels are a measure of public concern for the scenic quality of the landscape.

Sensitivity levels are determined for land areas viewed by those who are traveling through the landscape on developed roads and trails; are using areas such as campgrounds and visitor centers; or are recreating at lakes, streams, and other water bodies. It is recognized that all lands are seen at least by aircraft users. Therefore, some degree of visitor sensitivity will be established for the entire land base.

Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment:

-Level 1, Highest Sensitivity -

Includes all seen areas from PRIMARY travel routes, use areas, and water bodies where, as a minimum, at least one-fourth of the visitors have a MAJOR concern for the scenic qualities. Level 1 also includes all areas seen from SECONDARY travel routes, use areas, and water bodies where at least three-fourths of the visitors have a MAJOR concern for the scenic qualities.

-Level 2, Average Sensitivity -

Includes all areas seen from PRIMARY travel routes, use areas, and water bodies where fewer than one-fourth of the visitors have a MAJOR concern for scenic qualities. Level 2 also includes all areas seen from SECONDARY travel routes, use areas, and water bodies where at least one-fourth and not more than three-fourths of the visitors have a MAJOR concern for scenic qualities.

-Level 3, Lowest Sensitivity -

Includes all areas seen from SECONDARY travel routes, use areas, and water bodies where less than one-fourth of the visitors have a MAJOR concern for scenic quality, and all lands not seen from any travel route, use area, or water body. (Level 3 does not include any area seen from PRIMARY routes or areas.)

Sensitivity levels are correlated with distance zones of foreground, middleground, and background^{3/} for areas seen established in the sensitivity level determination. This step places the correct emphasis for the viewers concern for scenic quality within the system.

Quality Objectives

The visual quality objectives (VQQ's) are designed to develop measurable standards or objectives for the visual management of all lands. The objectives are based upon the previously determined variety classes and sensitivity levels. They are represented by five terms which can be defined as visual resource management goals:

-Preservation (P) -

Allows ecological changes only. Management activities, except for very low visual-impact recreation facilities, are prohibited.

^{3/} Foreground. The limit of this zone is based upon distances at which details can be perceived. It will usually be limited to areas within 1/4 to 1/2 mile of the observer.

Middleground. This zone extends from foreground zone to 3 to 5 miles from the observer.

Background. This zone extends from middleground to infinity.

-Retention (R) -

Activities may only repeat form, line, color, and texture which are frequently found in the characteristic landscape.

-Partial Retention (PR) -

Management activities must remain visually subordinate to the characteristic landscape. Activities may repeat or introduce form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape.

-Modification (M) -

Activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely, and at such a scale, that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional elements must remain visually subordinate to the proposed composition.

-Maximum Modification (MM) -

Management activities of vegetative and landform alterations may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middle ground, they may naturally establish form, line, color, or texture.

APPENDIX C

THE BLM VISUAL RESOURCE CONTRAST RATING SYSTEM ^{1/}

The objective of the visual resource contrast rating system is to provide a measure of whether the Proposed Action would meet the requirements of the assigned VRM classes. The degree to which a management activity adversely affects the visual quality of a landscape depends on the extent of visual contrast that is created between the activity and the existing landscape character. Contrast is measured by separating the landscape into 1) land and water surfaces, 2) vegetation, and 3) structures and then predicting the magnitude of change in contrast with the basic elements (form, line, color, and texture) for each of these major features. Assessment of the degree of contrast would indicate the severity of impact and would guide the plans for mitigating the contrasts to meet the requirements of the VRM classes. Contrasts are considered from the most critical viewpoints for distance, angle of observation, length of time, relative size of the project, season of the year, light, and the effects of time on the healing process.

^{1/} Based upon:

U.S. Department of Agriculture, Forest Service. 1974. Agriculture Handbook Number 462, Chapter 1-The Visual Management System. U.S. Government Printing Office: Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1978. Manual 8431-Visual Resource Contrast Rating. U.S. Government Printing Office: Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1980. Visual Resource Management Program. U.S. Government Printing Office: Washington, D.C.

The following parameters are applied to determine if the Proposed Action would meet the requirements of the assigned VRM classes.

- Class 1: The degree of contrast for any one element may not exceed a weak degree of contrast (1x) and the total contrast rating for any one feature may not exceed 10.
- Class 2: The degree of contrast for any one element may not exceed a moderate value (2x), and the total contrast rating for any feature may not exceed 12.
- Class 3: The degree of contrast for any one element should not exceed a moderate value (2x), and the total contrast rating for any feature may not exceed 16.
- Class 4: The total contrast rating for any feature should not exceed 20.

Likewise, the following guidelines are used to determine if the Proposed Action would meet the requirements of the assigned VQO's on National Forest Lands.

Duration of Visual Impact:

-Preservation (P)-

Only ecological change is permitted.

-Retention (R) -

Immediate reduction in form, line, color, and texture contrast should be accomplished either during operation or immediately after.

-Partial Retention (PR) -

Reduction in form, line, color, and texture should be accomplished as soon after project completion as possible or, at a minimum, within the first year.

-Modification (M) -

Reduction in form, line, color, and texture should be accomplished in the first year or, at a minimum, should meet existing regional guidelines.

-Maximum Modification (MM) -

Reduction of contrast should be accomplished within 5 years.

Degree of Contrast:

For purposes of this project, the contrasts for each VQO should not exceed those parameters for basically comparable VRM Classes as follows:

Forest Service VQO's

BLM VRM Classes

| | | |
|---|----------------------|---------|
| Preservation (P) | equals approximately | Class 1 |
| Retention (R) | equals approximately | Class 2 |
| Partial Retention (PR) | equals approximately | Class 3 |
| Modification (M) and Maximum Modification (MM) | equals approximately | Class 4 |

The identification of specific contrasts in form, line, color, and texture indicate the problems that could allow for design mitigation. By applying design procedures to the Proposed Action, visual contrasts can be eliminated or reduced to potentially meet the visual planning objectives that are

stipulated in the VRM class designations. Once a project has been designed or mitigation measures developed to reduce visual contrasts, it is reassessed by the visual contrast system to determine if the project can meet the area's visual goals and, if not, to what degree the landscape's visual resource would be adversely affected.

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Rola

AL IMPACT
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ISC 1279-3a (Feb. 1977)

